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Gleanings in Bee Culture

Volume LXII January, 1934 Number 1

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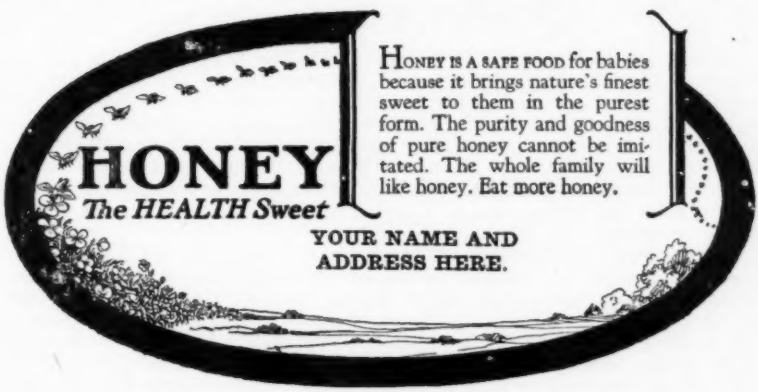
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We can supply queens during the winter months to enable you to save those queenless colonies or for making extra early increase if your locality warrants it. Package bees ready for shipping in March. We urge that orders be booked now and have your bees shipped just as early in the spring as weather conditions in your locality will permit. It is very necessary that the bees have ample time to build up into strong colonies before the honey flow and not during the flow if you wish to increase your crop of honey which means money saved. Write us now and arrange for your bees in advance of the season for early spring delivery when you want them as prices will not be lower. Prices as authorized by the NRA Code, which is the lowest permitted.

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Summary for U. S. Government Honey Market Report for First Half of December

Abnormally mild weather in the West has again featured the weather reports, with excesses of more than 12° above normal temperature for the week ending December 12 reported in a number of areas in the western states. The upper portion of the eastern states, on the other hand, has had a marked deficiency of temperature. Precipitation during this period has been chiefly confined to the Pacific Northwest and portions of the Southeast, though during the past few days rain fell heavily throughout California, extending to part of the mountain states in the form of snow. Bees have continued to fly over much of the West, reducing winter stores abnormally, but they have been confined to the hives over most of the East. Brood-rearing is reported from most of the Pacific Coast area, and in southern California bees are obtaining considerable nectar from eucalyptus, off-bloom orange, lemons and white mustard.

Demand for honey has slackened almost everywhere, but because a considerable proportion of the crop has already moved, price declines have been less noticeable than might have been expected. Beekeepers appear less anxious to sell than usual, and in many cases are holding for price advances. Stocks of comb honey are now very light almost everywhere, but wide price ranges continue. Demand for export continue light.

Monthly Report of Honey Producers

Early in December we sent the following questions to honey producers: 1. What per cent of the honey produced in your locality has already left the hands of the producers? Give answer in per cent. 2. At what price has honey been sold or contracted for, if any, in large lots (carload or less) in your locality during the past month for (a) extracted honey, per pound? (b) comb honey, fancy and No. 1 per case? 3. What are prices when sold to grocers in case lots of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per case? 4. What is the retail price to consumers in your locality of (a) extrarted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per section? 5. How is honey now moving on the market in your locality? Give answer in one word as slow, fair or rapid. 6. How does the number of colonies being wintered in your locality compare with that of last year's? Give answer in per cent. 7. What is your estimate of prospects for a normal honey crop in 1934, considering the present condition of the bees and the honey plants? Give answer in per cent of average crop for your locality. The answers received are tabulated below.

State. Name.	Pct. sold.	Large lots. Ex.	Large lots. Comb.	To grocers. Ex.	To grocers. Comb.	Retailers. Ex.	Retailers. Comb.	Movement.	Pct. colo. wint.	1934 pros.
Ala. (H. C. Short)	..	..	..	..	..	$.50	..	Fair	100	100
Ala. (J. M. Cutts)	..	.07½	..	.55	..	.65	..	Fair	92	100
B. C. (A. W. Finlay)	70	.10	..	.75	..	.90	..	Slow	100	100
Calif. (L. L. Andrews)	75	.05¾	..	..	..	.62	.15	Fair	85	10
Colo. (O. E. Adcock)	60	.04½	2.35	.35	2.65	.45	.12	Fair	90	100
Conn. (A. W. Yates)	50	.07	3.00	.70	5.00	1.00	.30	Fair	100	100
Fla. (C. C. Cook)	..	.04½	..	.33	..	.40	..	Fair	100	..
Fla. (H. Hewitt)	65	.04½	..	.40	..	.55	..	Fair	80	100
Ga. (J. J. Wilder)	60	..	..	.40	..	.50	..	Fair	115	100
Idaho. (Ryon R. Isbell)	60	.05¼	2.45	.35	3.00	.45	.15	Fair	90	110
Ind. (Jay Smith)	90	..	..	.45	3.00	.60	.15	Slow	100	100
Ind. (T. C. Johnson)	100	..	..	.60	3.60	.75	.20	Slow	90	100
Ind. (E. S. Miller)	40	..	..	.45	3.00	.60	.15	Fair	90	90
Iowa. (F. Coverdale)	50	.05½	..	.60	2.25	.65	.10	Rapid	100	95
Kans. (J. F. Garner)	98	.06	..	.40	..	.55	.17	Fair	100	100
La. (E. C. Davis)	..	.04	..	.35	..	.45	..	Fair	100	100
Me. (O. B. Griffin)	50	..	..	..	5.00	..	.35	Slow	80	100
Md. (S. G. Crocker, Jr.)	..	..	..	.60	3.00	.75	.20	Slow	100	75
Mich. (Ira D. Bartlett)	60	.05½	..	.45	..	.55	..	Fair	90	100
Mich. (E. D. Townsend)	80	.06	..	..	..	..	..	Fair	90	90
Minn. (Francis Jager)	90	.05½	..	..	..	..	..	Fair	100	80
Minn. (F. W. Ray)	40	.05	..	.37½	..	.45	..	Slow	100	100
Minn. (B. L. Morehouse)	40	.06½	..	.45	..	.60	.19	Fair	100	65
Nebr. (J. H. Wagner)	60	.05	2.25	.40	2.40	.49	.12	Slow	110	80
Nev. (Geo. G. Schweis)	..	.05	..	.40	2.50	.55	.17	Fair	100	75
N. Y. (Adams & Myers)	..	..	..	.50	3.60	.70	.20	Slow	100	100
N. Y. (Geo. B. Howe)	..	..	..	..	3.60	.58	.20	Slow	100	..
N. Y. (F. W. Lesser)	..	.07	3.60	.48	4.25	.60	.20	Fair	100	100
N. C. (C. S. Baumgarner)	100	..	..	.50	3.60	.65	.20	Slow	100	90
N. C. (W. J. Martin)	75	.04	..	.60	..	.75	.17	Fair	105	100
N. D. (Chas. Engle)	..	.05½	..	.40	2.75	.50	.15	Fair	90	50
Ohio. (F. Leininger)	90	.06	..	..	..	..	..	Slow	100	125
Ohio. (J. F. Moore)	90	..	..	.45	3.00	.60	.18	Slow	90	90
Ohio. (R. D. Hiatt)	50	..	..	.60	4.50	.75	.23	Slow	110	100
Okla. (C. F. Stiles)	87	..	..	.50	..	.65	.16	Fair	85	95
Pa. (D. C. Gilham)	25	..	..	.75	4.25	1.00	.25	Fair	100	100
S. C. (E. S. Prevost)	90	..	..	.62½	..	.75	..	Slow	100	80
Tenn. (J. M. Buchanan)	90	..	..	..	..	.75	.25	Slow	95	90
Texas. (T. A. Bowden)	95	..	..	.45	..	.55	..	Fair	90	50
Texas. (J. N. Mayes)	90	..	..	.40	..	..	..	Fair	100	50
Texas. (H. B. Parks)	90	.04	..	.35	..	.45	..	Fair	100	100
Utah. (M. A. Gill)	75	.04½	2.40	.30	2.50	.35	.14	Fair	90	75
Vt. (Phillip Crane)	90	..	..	..	..	..	..	Slow	100	75
Va. (T. C. Asher)	60	..	..	.50	3.00	.65	.19	Fair	100	90
Wash. (W. L. Cox)	..	.05	..	..	..	..	.18	Slow	95	100
Wash. (G. W. B. Saxton)	80	..	..	.37½	..	.45	..	Fair	100	75
Wis. (N. E. France)	75	..	..	..	..	.45	.15	Fair	..	90
Wis. (E. H. Hanselman)	25	..	..	.40	2.40	.45	.15	Slow	85	50
Wyo. (Earl C. Reed)	60	.05	..	.39	..	.45	..	Fair	90	75

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"I still believe in honey production as a worthy calling and feel that never has it been more promising than now. If I were a young man ready to start over again I can think of nothing which would be more attractive to me as a way of life and a means of livelihood than beekeeping.

"After a long life spent with the bees I want to pay a tribute to the busy insects whose labor insures the fruitfulness of so many plants while providing at the same time for them and their owner as well. The product of the apiary is of the highest quality—the standard by which all that is pure, sweet and wholesome is measured. The one who lives by the labor of the bees adds to the wealth of his fellows as well as his own. I am proud of my calling and proud of the fact that my children and grandchildren are likewise content to be known as beekeepers."

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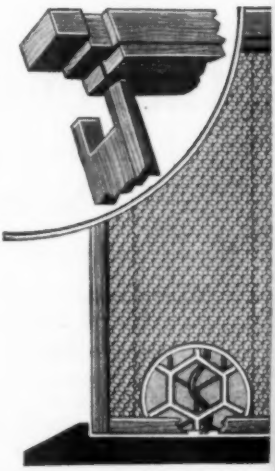

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Gleanings in Bee Culture
JANUARY, 1934

Happy New Year to All!

Millen Scholarship

Those who had the pleasure of knowing the late Prof. F. Eric Millen as well as the great multitude who felt his helpful influence through his writings and otherwise, will be pleased to learn of the gracious act of Mrs. Millen and daughters, Miss Nora and Miss Margaret, in establishing a scholarship valued at $400 at the Ontario Agricultural College at Guelph, Ontario, Canada, where Prof. Millen was professor of beekeeping for so many years. In addition Mrs. Millen has donated a large collection of books and journals to the Apicultural Department Library, now one of the most complete beekeeping libraries on the continent. The scholarship will be awarded annually to the senior student who submits the best thesis on a subject relating to beekeeping. If no thesis is submitted, the award will go to the senior student specializing in bee culture who secures the highest standing in the final examinations, subject to the approval of the thesis committee. Thus Prof. Millen's work will be carried on at Guelph.

Co-operative Spirit Born of Necessity

Mr. Corkins certainly makes a strong plea for better organization among beekeepers in his article on the proposed marketing agreement for beekeepers, beginning on page 29 in this issue. He points out the greatest obstacle in the way of greater co-operation—the American desire for independence and freedom of action. In cities, the maze of conflicting interests compel people to co-operate to a certain degree, but in the country the greater freedom of space tends to individualism. Beekeepers greatly enjoy their freedom of action in the management of their bees. They do not want to be told what they may or may not do. It is only when they come to the problem of marketing that they are driven to seriously consider some form of co-operative effort. Mr. Mraz well describes this side of human nature in an article entitled "Rugged Individualism," beginning on page 39 in this issue, and human nature is not easily changed. Whatever may be the result of the present interest in the proposed marketing agreement for beekeepers, it would seem that it should at least strengthen existing beekeepers' associations and give us all a better understanding of the pitfalls and possibilities of co-operative effort within the industry.

The Package-Bee Industry

The remarkable growth of the package-bee industry during recent years is one of the outstanding features in modern beekeeping. While a few bees have been shipped from the South to make up winter losses in the North for more than 50 years, it is only recently that it has become an industry. Twenty years ago only a few venturesome southern breeders were making small shipments of packages and nuclei; now, thousands upon thousands of packages are shipped northward from the Gulf States and California every spring.

The rapid growth in production of package bees soon resulted in keen competition among breeders, with lower and lower prices which last year threatened the very existence of the industry. But the producers have now gotten together on a marketing agreement which should put it on a sound basis. This agreement as finally modified and submitted at a hearing before government officials on December 13, is published in full in this issue, beginning on page 57.

Honey Sales Sensitive to Business Conditions

Reports indicate quite a slump in honey sales coincident with the slump in general business toward the close of the year just passed. Apparently honey is one of the things consumers can get along without when money is difficult to obtain. Industrial workers are among the beekeepers' best customers, and as employment increases honey sales should show a rapid

recovery. As a rule, honey sales are disappointing during the holidays and for a few weeks after, but usually pick up later in January. If retail sales follow the usual trend during the remainder of the winter, the 1933 honey crop should be well cleaned up before any new honey is ready for market. The improved export demand and the short crop in the United States are important factors in the honey market at this time.

Hubam for Allotment Contract Land

In some respects Hubam (annual white sweet clover) is especially adapted for occupying land on contract acres withdrawn from production in the government allotment contracts. It makes a rank growth to be plowed under during winter or early spring for soil improvement; it grows so rapidly, if conditions are at all favorable, that it crowds out weeds; and it is of especial interest to beekeepers since it blooms the first season and yields nectar profusely if conditions are favorable. Since sweet clover is listed among those plants which may be grown on allotment-contract acres in the government ruling, beekeepers should make a special effort to see that some variety of sweet clover will occupy much of this contract acreage in localities where sweet clover does well. If planted for soil improvement, it is usually plowed under the following winter or spring, therefore biennial sweet clover is not given an opportunity to bloom. But Hubam makes its full growth and blooms the first season, thus supplying more growth to plow under as well as nectar for the bees. If planted for permanent pasture, the biennial variety will, of course, supply bee pasture the following year. Especially in the corn belt and the wheat belt where sweet clover should thrive best, beekeepers will do well to consult their county agents with the idea of increasing their nectar resources through the agency of sweet clover.

A Flavor for Every Taste

Nature is certainly lavish in the variety of flavors of honey. It has been said that there are as many different flavors of honeys as there are varieties of nectar-bearing plants. But this is only a part of the truth, for, in addition to the characteristic flavors corresponding to the nectar-bearing plants, there is the almost endless number of flavors made by blending, either by the bees or by human agency. Those who are accustomed to the flavor of honey from only a few sources do not realize the delight that comes to a honey lover in sampling honey from many sources, each with its distinctive flavor. No other sweet offers such a variety of flavor, or is capable of so stimulating the imagination. The association of honey of various flavors with their floral sources brings to the mind of a honey expert a veritable panorama of flowers, places, and events.

Beekeepers are usually quite sensitive about the quality of their own production, and very much inclined to think that the honey of their own locality is better than that of any other. In the orange and sage region of southern California, beekeepers put honey from these sources at the top of the list; in the alfalfa and sweet clover region of the inter-mountain region they point with pride to the wonderful qualities of honey from these sources; in the sweet-clover region of the Missouri Valley, sweet clover honey is held in highest esteem; just a little farther east white clover and alsike clover honey is the standard of excellence; in the buckwheat region of New York and Pennsylvania, beekeepers enjoy their buckwheat honey; along the Atlantic Coast they prefer the rich flavor of honey from goldenrod and other fall flowers; and in the South and Southwest, beekeepers generally prefer the honeys of their respective localities.

Fortunately, this local preference applies not only to beekeepers but, in a general way also to consumers of the various honey-flora regions. It often happens that people prefer the kind of honey to which they were accustomed in childhood, making it difficult to learn to like any other flavor. On the other hand, a prominent New York State beekeeper who began his beekeeping career in the white-clover region but later moved to the buckwheat region, told the Editor a few years ago that back in his clover-honey days he could not understand how any one could eat buckwheat honey, but after he began producing buckwheat honey he learned to like it, and now prefers it to clover.

In some respects, it is indeed fortunate that there seems to be a flavor for every taste, or, perhaps, one should say, a taste for every flavor. If everybody liked the

light-colored mild-flavored honeys best, what would become of the rest of it? Or if every one preferred dark-colored stronger-flavored honey, where would the producers of mild-flavored honey market their product?

The Southern Beekeepers' Conference and Marketing Agreement of the Bee Shippers' Federation.

This conference was held at New Orleans, in the Monteleone Hotel, on December 11-13. In every way both the Conference and the meeting of the Federation were a great success. While the attendance was not large, it was highly representative of all the Southern States, especially those in which the shipping of package bees and nuclei is a large industry.

It is, perhaps, not too much to say that, of all the interesting speakers that were heard at the Conference on the first day, none made a greater hit than Mrs. Malitta F. Jensen of the American Honey Institute. At the close of her first address on the morning of December 11, Mr. Fred W. Muth of Cincinnati, arose and said that he was sold on the American Honey Institute and suggested that the hat be passed then and there for a substantial gift to the Institute. This was done and when the hat came back full of dollars, 54 in all, there was enthusiastic hand clapping.

Nor was this all. It is generally believed that the leaders from the various Southern States will spread the news of the good work of the Institute back to their respective beekeepers' associations.

In the afternoon of the same day, Mrs. Jensen showed how southern honeys lend themselves, without additional flavoring, to cakes and cookies which she had prepared.

But the big work of the Conference, and for which it was called, was to consider and adopt the marketing agreement presented by the Bee Shippers' Federation under the Agricultural Adjustment Administration. Mr. Thomas Atchison of the Department of Agriculture, Montgomery, Alabama; W. E. Harrell, Hayneville, Alabama; W. E. Anderson, Department of Agriculture, Baton Rouge, Louisiana; and James I. Hambleton of the Bee Culture Laboratory, Washington, D. C., have been working on this marketing agreement for months, having had frequent conferences with government officials at Washington. This agreement was then presented for general discussion by the Conference on December 12, so that all differences, if any, could be ironed out. While there were some slight differences of opinion, it was unanimously adopted after some slight changes.

A formal hearing before government officials was held at the Monteleone Hotel the next day. John T. Pearson and Lawrence Sample of the A. A. A., Washington, D. C., gave an opportunity for every one to be heard both for and against the proposed agreement.

Mr. Pearson listened carefully to the arguments in favor of the code. He asked frequent and sympathetic questions, all of which were answered by various ones present. He then asked for expressions from any who might be opposed, but no opposition was made. He seemed highly pleased with the almost unanimous approval both on the part of producers of package bees and of the representatives of the honey producers or buyers of such bees.

When asked if he thought that the Secretary of Agriculture would accept the Agreement as here offered, he said he could not, of course, speak for the Secretary, but that he would venture the opinion that he would do so, because nearly all the testimony from producers and consumers seemed to be for it.

It seemed to be the general feeling on the part of those present that the marketing agreement with its schedule of fair prices would be accepted and adopted, and that from now on the new scale of prices would prevail for the coming season.

From 90 to 95 per cent of the package men and their dealers will sign this new agreement so that those who do not sign will be bound just the same. It is understood that the new prices will be those presented on page 59 in this issue.

The next meeting of the Southern Conference will be held at Valdosta, Georgia. W. E. Harrell, Hayneville, Alabama, was elected president, and G. G. Puett, Hahira, Georgia, secretary. It is hoped that the next annual meeting of the American Honey Producers' League and of the American Honey Institute will be held at the same time and place. The South is holding out its right hand of fellowship and invites us of the North to come down and enjoy a good meeting in a fine climate. I vote aye. E. R. Root.

Meeting Changing Conditions

Jack Deyell

Beekeepers Must be More Alert in Adjusting Management to the Ever Changing Sources of Nectar

As a boy in Ontario, Canada, I well remember how the farmers use to grow alsike clover for seed. This meant excellent bee pasturage. In those days there was practically no sweet clover. If it did grow in remote spots, it was uprooted because it was considered a noxious weed.

The major sources of nectar were alsike, white clover, basswood, and buckwheat. At that time it was comparatively easy for beekeepers to keep the white honey separated from the dark honey, because there was ample time between the white and dark honey flows to remove the white surplus honey before the buckwheat honey flow started.

Advent of Sweet Clover Changes the Picture

Within recent years sweet clover has come into that region and changed the picture. At present, there is practically a continuous honey flow from the middle of June until late August. While sweet clover has increased the honey crop, it has also necessitated changes in beekeeping practice. One of the problems is to keep the white and dark honeys separated as the sweet clover and buckwheat honey flows overlap. This condition calls for more expert management. In fact, in some regions where buckwheat is grown excessively, it is practically impossible even with the most expert management to keep the two honeys entirely separated.

Prior to the coming of sweet clover in the alsike and white clover regions of both the United States and Canada, it was extremely important for beekeepers to have their colonies up to the peak of strength at the beginning of the alsike honey flow in order to secure the maximum crop. An alsike honey flow may not last more than two weeks or three at the most. The advent of sweet clover in these regions has prolonged the honey flow at least three or four weeks. As a rule, the sweet clover flow starts at the time the alsike flow begins to wane. This may have a tendency toward laxness in apiary management, because beekeepers with colonies below normal strength at the beginning of the alsike flow, can, with the help of sweet clover, secure a fair crop. The question is: How much more surplus honey would these beekeepers secure if they would have their hives boiling over with bees at the beginning of the alsike honey flow?

Disappearance of Sweet Clover Changes the Picture

A few days ago, I met a commercial

One of The A. I. Root Company's apiaries in two-story double-walled hives in a sheltered location.

beekeeper from Montana. He remarked that in his locality one could not count on a bee location being reliable for more than 10 years. When he first established apiaries in that sweet-clover area he could put 300 colonies in one yard and secure a good crop. At present he can not put more than 60 or 75 colonies in one apiary, and he does not secure the large crops he did formerly. He attributes these poor prospects to a change of crop rotation which includes sugar beet production and a reduction of sweet-clover acreage. This beekeeper is considering moving his bees and equipment to better bee pasturage.

Moving Bees a Big Job

When a commercial beekeeper feels absolutely sure that the major source or sources of nectar in his locality have gone permanently by reason of changes in the crop rotation, and when he is reasonably certain that dependable sources of nectar are not likely to return, there is nothing left for him to do but to move to a new location.

It is not difficult to pick up an apiary and move it a reasonable distance to better pasturage, but to move a series of apiaries as well as all equipment a considerable distance is a big undertaking. First of all, one must be absolutely sure that the new location is better than the old one. Suitable apiary sites must be selected in advance of moving, also a building for the storage of combs and bee equipment must be secured.

The Best Time for Moving Bees

Early spring or late fall, when there is the least brood in the hives, is the best time for moving bees long distances either by motor truck or by rail. For cool-weather moving, entrance screens are sufficient, but for warm weather, top screens as well as entrance screens should be used to provide adequate ventilation for bees en route. Generally speaking, the fall, during October, is the best time to move bees long distances.

Other Locations That Run Out

There are at least two other types of beekeeping locations that are limited in their periods of nectar supply, namely, the wild raspberry and fireweed locations of the North. I spent two seasons, 1917 and 1918, in the wild raspberry region of northern Michigan with between 200 and 300 colonies of bees. The wild raspberry is one of the most dependable nectar plants of the North. Bees will begin working on it early in the morning and continue until dark. I have seen them working wild raspberry at a temperature of 68° F., during a light drizzling rain. I did not suppose this could be possible until I saw it. It is possible because the blossoms hang downward and shed the rain.

After the timber is removed and the ground burned over, the fireweed appears and thrives for a time, then the wild raspberry springs up in dense marshes. For perhaps ten years, these plants constitute a very reliable source of nectar. Then the

Another of The A. I. Root Company's apiaries near Medina, Ohio. Chief sources of nectar, white clover, alsike clover and fall flowers.

raspberry gradually gives way to other plants of minor nectar importance. In some sections of the North, alsike clover is spreading rapidly and helps to take the place of the raspberry as it vanishes. However, when the fireweed and raspberry plants have disappeared, it is usually desirable for the commercial beekeeper to move his apiaries to some other section where nectar sources are dependable.

There are, however, a number of good locations in the marshy regions in the North. While I was keeping bees in Michigan, I talked with one commercial beekeeper who said that he had experienced only one failure in 33 years.

Even in the most dependable locations beekeepers occasionally experience a lean year. This is usually due to adverse weather conditions for honey plants the previous fall, winter, or spring. For instance, in a region where the clovers are winterkilled and prospects for a honey crop are poor, instead of sitting back and doing nothing about it, the commercial beekeeper should investigate prospects in some adjoining territory with a view of moving his bees to a location where prospects are more favorable.

Migratory Beekeeping

This type of beekeeping has been practiced in some parts of the West for a number of years and is now being practiced in some sections of the East because of the erratic weather conditions that have been experienced during the past three or four years.

The apiaries may be moved a distance of, say, 75 to 150 miles and operated at long-distance range. In some cases, in the production of extracted honey, the supers of honey are hauled to a central extracting plant at the home base and in other cases the extracting is done at a convenient central place in the vicinity of the out-apiaries.

Detailed Planning Essential

To be successful in this undertaking, plans must be made in advance for moving bees. This means that suitable apiary locations must be secured, also that the proper facilities for moving apiaries must be at hand at the right time.

Since good roads and large motor trucks are here, moving bees is simplified. An apiary of 40 or 50 colonies can be loaded on to a truck early on a cool morning and moved a distance of 75 or 100 miles in less than half a day.

In some instances, package bees are installed early in the spring and then moved some distance to the desired location during a cool day before the colonies become populous in bees. It is then possible to use only entrance screens. This method avoids extra labor and moving equipment.

In operating far-distant apiaries from a home plant, it is quite necessary to know when the major honey flow starts and to be ready for it. For instance, when visiting the distant yards in the spring for the purpose of checking through the colonies, instead of driving an empty truck, a full load of supers should be taken along in order to have them on hand when needed a little later on in the season. The supers can be piled up bee-and-mouse proof. In like manner, when the honey is ready to be taken off, maximum loads of filled supers should be hauled to the central

A horseshoe-shaped hill affords excellent winter protection for this apiary.

plant when possible instead of running the trucks empty or partly loaded.

By using careful forethought and planning the details of the work in advance it is surprising what can be accomplished in the operation of apiaries some distance from the home plant.

How to Meet a Crop Failure

In the most favorable honey regions there may come a year when little or no surplus honey is secured, even when prospects for a crop appear to be good. This may be due to erratic weather conditions which interfere with normal nectar secretion and bee flight. When these conditions occur, it is usually too late to move bees to better pasture. The beekeeper confronted with this situation is compelled to make the best of it.

Instead of sitting back and bemoaning a crop failure, the alert beekeeper will buy honey in a region where it is obtainable, with a view of supplying his market. This means that every commercial beekeeper should have an emergency fund to tide him over a lean year. If a beekeeper who experiences a crop failure does not buy honey to supply the trade he has already developed, some other beekeeper from an adjoining territory may come in and take over all of his customers.

There is at least one thing to be kept in mind regarding a crop failure and that is that when no surplus honey is secured, much of the labor of producing a crop is obviated. The time and expense saved in producing a crop can then be used in buying and marketing honey produced by some other beekeeper. As a rule, during a good honey year beekeepers have little or no time for the upkeep of hives and equipment. When a lean year comes there is more time for painting and repairing hives, sorting out and melting up old undesirable combs, and requeening, etc.

Intelligent Local Marketing Profitable.

It is surprising what one can do in selling honey locally when intelligent effort is put behind the enterprise. Honey-selling is one of the most interesting kinds of work imaginable. Certainly a honey salesman has an unlimited line of arguments in favor of his products.

There are, of course, different methods of marketing honey. Each beekeeper must adopt the method that seems best for him. Local newspaper advertising is well worth trying out. In some instances, beekeepers sell extracted honey in bulk direct from their tanks, weighing it out into containers furnished by customers. This means a saving in the cost of containers, labels, paste, and labor, which saving is passed on to the customer.

To summarize briefly, the commercial beekeeper must be ready to adjust his program to meet every changing condition. He must be sure, however, to do the right thing at the right time, if possible. It is often difficult to know whether or not to move bees in order to better the situation.

It does seem as though the beekeepers in the drouth areas have had many things to put up with during the past three or four years. About the only consolation we have is that the changing conditions that affect honey crop prospects are likely to make better and more alert beekeepers of us all.

Medina, Ohio.

In locating outapiaries, it is well to look for an open space in the woods away from cultivated fields.

Queens Killed, Not Superseded

Jay Smith

Many Excellent Queens Are Lost Through Faulty Methods in Introducing Them

For many years I have received letters in substance as follows: "I would like to know why the queen I got was superseded so soon after she began to lay. I removed the old black queen four days before I put the introducing cage containing the new queen into the hive and left the cage in four days before releasing the queen. She looked like a good queen, being large and prolific and very yellow in color. When she was released from the cage, the bees paid no attention to her. She soon began to lay and in a very short time had two frames nearly filled with eggs. Imagine my surprise and disappointment, therefore, in looking into the hive a day later to find the yellow queen gone and in her place a black virgin. Can you tell me what the trouble was? Was it my fault in looking into the hive so soon after the queen began to lay?"

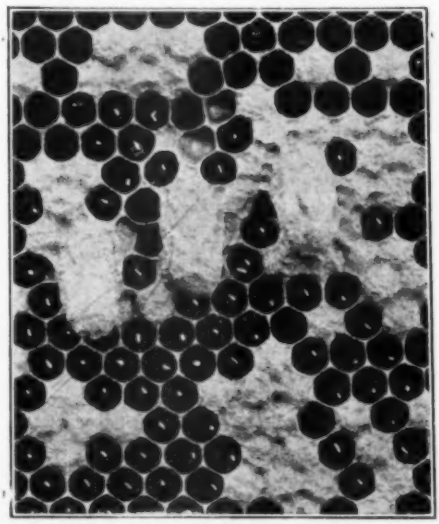
It was not your fault in examining the colony after the queen began to lay, for I never could see that that made a bit of difference. But it was your fault in removing the black queen four days before putting in the yellow one. Your queen was not superseded as we usually use the term, but was killed.

Definition of Supersedure

When we speak of supersedure, we usually mean that the queen is failing and the bees build queen cells into which the failing queen lays eggs. In due time one of these young queens emerges and supersedes the old one. If we use the word supersede in that sense, your queen was not superseded, but instead was killed by a virgin that emerged, not from a supersedure cell, but from a cell the bees began to build as soon as you removed the black queen. The new queen was not in the hive long enough for the bees to supersede her. That would have taken over two weeks while your yellow queen was not in the hive a week after being liberated. Then again had they superseded her, the young queen would have been yellow like her mother while you state that she was black like the queen you removed.

Laying Queens Seldom Tear Down Queen Cells

A fact not generally known is that a laying queen is very slow in tearing down queen cells. In many cases she refuses to tear them down at all but goes on about her business of egg laying till a young queen emerges, then as soon as the virgin meets the laying queen a fight takes place and the laying queen is always killed. Let us go back to nature; we will find that in nature a laying queen seldom if



Note the three sealed queen cells with eggs all around them. In another day, the laying queen would have been killed.

ever is required to tear down a queen cell. That is the job for the virgin and she is very adept at that job. I have known one virgin to destroy over a hundred queen cells in one night.

In case queen cells are just started when the queen is released from the introducing cage, I have never known the queen or bees to allow any to mature. In case five or six days elapse from the time of removing the old queen before the new one is released, it is a good policy to cut out all cells that may have been started. To do a thorough job of it, shake off all bees from the frames and look carefully for the cells,

as at times small ones are built where they are not easily seen.

The accompanying photograph will illustrate this point. Note the three queen cells capped over with eggs in worker cells all around them. This photo was taken and the cells allowed to remain till the film was developed at which time one of the young queens was just ready to emerge. In another day the laying queen would have been killed.

Queenright Colony Accepts Grafted Cells

There is a great difference in queens in this respect. Last season I had a peculiar case. I had a strong queenless and broodless colony building queen cells. I gave it the best care I knew in order to get it to accept a large percentage of cells and finish them in the best manner. In spite of all I could do it would not accept cells as well as the other colonies did, although it received the same care and management. It accepted and finished about 25 per cent of the grafted cells given while the others were accepting about 75 per cent. This went on for nearly two weeks and four graftings were given. I decided I would examine it to see if the trouble could be found when I was greatly surprised to find a fine young queen in the colony and several frames of capped brood. This queenless colony had called in a queen from her mating flight and made her welcome. It is seldom that a young laying queen will tolerate grafted cells in this manner.

In the past colonies that were superseding their queens have been given grafted cells and they finished them as well as though no queen were present. In some cases the queen seemed to want to push a good thing along and laid in the cell cups from which the grafted larvae were removed.

In case a colony has been left queenless so long that cells were sealed, removing every cell makes queen introduction more certain, for the bees, feeling their inability to rear a queen, will accept the new queen readily. However, this is not a good system to follow for the colony remains queenless so long that it is weakened. Again it is difficult in some cases to find every queen cell, and, if one is overlooked, disaster is almost sure to result.

Vincennes, Indiana.

Training 350,000 Beekeepers in Soviet Union

Dr. E. F. Phillips

Various Methods for Instructing Great Army of Beekeepers to Carry Out Ambitious Beekeeping Program

The task of training about 350,000 skilled beekeepers to take over the practical management of the new apiaries to be established under the Second Five-Year Plan is a task of magnificent proportions. The exact number of beekeepers required will, of course, depend on the personal qualities of the men, but it is safe to assume that for the next five years at least, the ability of each beekeeper will not be as great as that of our best commercial beekeepers. It will take more beekeepers to handle the new apiaries than would be required if all the beekeepers were more experienced.

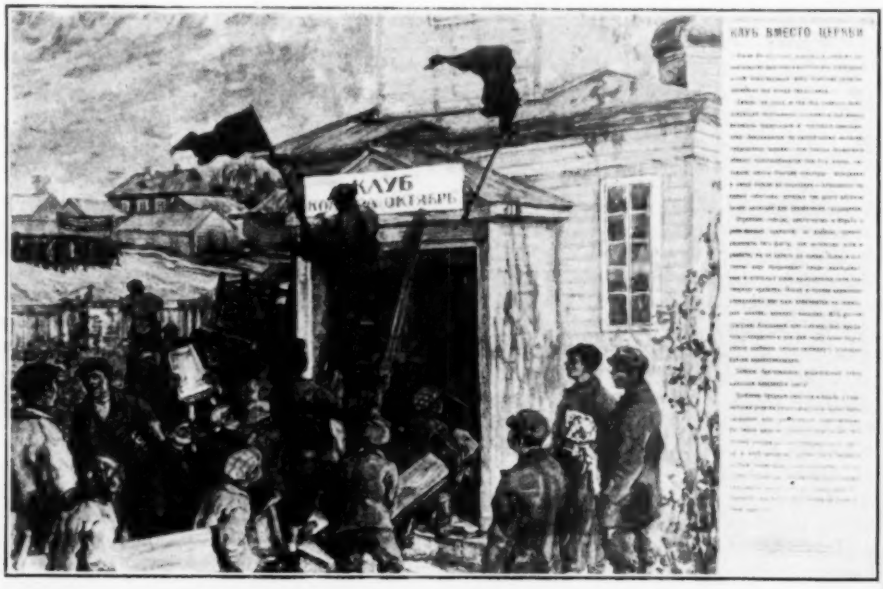
It is nothing unusual in this country for a beekeeper to be personally responsible for the handling of from 200 to 400 colonies, but the ability to manage the larger number comes only after some experience. Apparently not many of the present beekeepers in the Soviet Union are so far managing more than 100 colonies each, and in some instances the number of colonies per beekeeper is considerably less.

Correspondence Courses for Entire Nation

One of the centers for education of beekeeping is the Central Institute for Agricultural Education by Correspondence in Moscow. The director of this organization, Wetroff, kindly explained to me the details of their work, and it is a vast undertaking. Correspondence courses are offered in all lines of agriculture to any citizen of the Soviet Union. They now have an enrollment of 128,000 students, 4500 of whom are taking the course in beekeeping, and in all probability all these figures will soon be increased, for the Institute was established only in 1931. Training is now given in 150 different branches of agriculture.

The central office in Moscow sends out the programs and papers, and the replies of students go to the 160 colleges and technical schools in agriculture located all over the Soviet Union. The papers are carefully examined and are then returned to the student so that he may see wherein he has made mistakes. The paper is not approved unless the replies are satisfactory. In connection with the theoretical work based on a series of instructions and questions, practical or laboratory work is done under supervision either on a collective farm or in some laboratory in an agricultural college. The time required for practical or laboratory work is not the same for all courses, but is usually about one month a year. As the student shows improvement, he is shifted from one position to another, until, on the completion of his work, he may be put in charge of a large collective farm. Groups of students work together and consult with each other regarding their problems, but are supposed to answer their questions independently. They told me that the teachers who examine the papers become unusually keen in detecting too great a degree of co-operation in answering questions. There is a consultation with the student at the beginning of the work, another toward the middle of the prescribed course and a final consultation or examination at the end, and by means of these personal contacts the course is made more valuable.

From a colored poster used to stimulate interest in the Young Pioneers, an organization somewhat like our Boy Scouts, but used to teach communism.



From a colored poster advocating that village church buildings be converted into club houses for the peasants. The man on the ladder is nailing up the red flag.

Selection of Candidates for College Course

Students who show marked ability are, on the completion of a correspondence course, given opportunity to take a regular college course or to work in some institute in a special field of agriculture, so that the correspondence courses are in part a means of selecting the more capable students for later opportunities in training. While it is a basic idea of the communistic system that all men are equal and should be compensated for their labor on the basis of their needs, and not on the basis of their acuteness in money making, at the same time there is a recognition of technical skill, and the more skilled are compensated more nearly in accordance with that skill. It must not, however, be supposed that the pay for the job is always commensurate with the skill, for even men at the heads of vast projects do not receive as large wages as do many unskilled laborers here.

College Courses and Special Schools for Beekeeping

Beekeeping is also taught in several colleges and special schools. For example, the Marafa Experiment Station maintans a school, and to this station come annually at least 3000 persons for instruction in beekeeping. This school is for the Ukrain only. The period of their work is not always the same, depending on the special features of beekeeping in which they are interested. For their instruction, a great supply of charts and maps have been prepared which would admirably equip any teaching institution.

The colleges of agriculture do not yet all have teachers in beekeeping, although it is planned to install teachers in many of the others as fast as good men can be found for the posts. At present there are six colleges which teach beekeeping. Of the instruction given I can not say anything, for I did not have opportunity to go into details of this work.

One of the smaller schools for the teaching of beekeeping is located at Ismalov, not far from Moscow. This is an interesting place, because bees have been kept here for at least three hundred years, as the property of the Czars. In 1865 this apiary site was taken over by the Moscow Society for Acclimatization as a place for the study of bees and beekeeping, to be used as a research station and school. Professor Koschevnikov taught here for years and here conducted most of his research work on bees. He was director of

W. W. Alpatov, instructor in beekeeping in the University of Moscow, standing beside a beehive built to represent a house of the North-Russian type. The storage house in the background is typical.

the station for at least ten years and worked here for about thirty years. Professor Bogdanoff was also director here, he being one of the founders of Russian zoology. Kulagin, another leading figure in Russian beekeeping, also worked and taught here.

In 1931 this school celebrated its fiftieth anniversary of the giving of courses. The directorship is now in the hands of Simakov, a graduate of the school. Last year they had 92 students, of whom 30 came from republics of the Soviet Union other than Russia, and this is reported to be the best organized course in beekeeping in the Union. Students who take this course stay three months for theoretical work and then work in a collective apiary for three months under the direction of an experienced beekeeper, after which they are expected to be able to operate alone. At one time Titoff, who is well known to many American beekeepers, was director of this school, following the directorship of Koschevnikov. There is at the school an extensive museum of the older Russian equipment, which is excellent. One of the men who did much for this school is Bukewich, who may be termed the founder of experimental work in practical beekeeping in Russia.

The school at Ismalov is an interesting place to visit. It is located in an enormous park formerly used as a deer park by the royal family. The present buildings were mostly constructed when the apiary was taken over by the Society of Acclimatization and they are interesting examples of Russian wooden architecture. They form

Simakov, Director of the Ismalova Beekeeping School, near Moscow. Part of the apiary is shown in the background.

a small village in the park, and here the director and students live and work during the period of the course. There is a large lecture hall in one building with a working library, the museum building, plenty of work shops and a large apiary. The one brick building on the grounds was erected during the directorship of Titoff.

There is another school for the training of future heads of collective apiaries at Krasnodar, Kuban District, but this we did not visit. Here the course is reported to be about the same as at Ismalov, and the plan of work is the same.

Beekeeping Experiment Stations

Education in apiculture may properly

Main building at the Ismalova Beekeeping School. North-Russian log architecture.

include mention of the experiment stations established for the investigation of beekeeping problems, and this is all the more appropriate since some of them give practical courses of instruction. Some mention has been made of special features of the work of some of these experiment stations elsewhere. In addition to the Marafa, Essentucki, and Tula Stations, which have been mentioned, there is a station near Leningrad, one near Moscow, and another near Sverlovsk in the Ural territory, the last three named not having been visited by us.

The Tula Station is maintained for the benefit of beekeeping of the entire Union, the others being chiefly for work on problems of their respective republics or districts. The Tula Station has issued scientific publications of great merit during the past few years, unquestionably superior to that of the other communistic stations, but, due to a reorganization of the work there, the former staff has been scattered to other institutions and new men have been appointed in their places. At the time of our visit, the new staff had not yet organized its work, so that our beekeeping friends advised us not to take time for a visit there. This was all the more to be regretted because near Tula is also located the home of Tolstoi, the noted Russian writer and philosopher. He was a beekeeper and his apiary is still maintained on the estate as a collective apiary. Of course Tolstoi is dead and a visit to his estate and apiary would have been merely the paying of tribute to a great man. From Abrikosov, whom we met several times in Moscow, we learned much of Tolstoi, since Abrikosov was for years his secretary and intimate.

An American visitor to these stations is impressed by the considerable number of men employed in them. At Essentucki, for example, there were more men employed than would be found in all our research stations combined, but most of these men were engaged in work for which scientific training was not essential. Whether such numbers are required because of the tendency to use one's time in a less effective way than is usual in America, or whether these men will in time all present work of major importance, I can not say, but at any rate an American visitor seems to detect a lack of that urgency for the effective use of one's time in the stations, just as in their factories, on the collective farms, and elsewhere.

In the stations visited I was impressed by the fact that the results of their investigations are carefully recorded in useful charts. Similar charts are used for instructional purposes. Since conversation was difficult, even with the able help of Alpatov, it was often possible for me to get the essential features of their investi-

Communist babies love to kick. From a colored poster used for education in the care of children.

gations merely by studying these charts. At the Marafa Station the director promised that he would have copies made of most of these charts and would send them to me. I am sure that when they come I shall find them exceedingly useful.

Rapid Elimination of Illiteracy

Instruction in beekeeping is a minute part of the whole scheme of education in the Soviet Union. When it is recalled that before the Revolution illiteracy was far more common than literacy, it is seen that the elimination of illiteracy is the greatest problem of the Soviet Union, for one can take instruction in any subject until he can at least read and write. Illiteracy is being obliterated at a rate never before equaled elsewhere. Following an ability to read and write, there is a common demand for further education, especially along practical lines, and some of the students of beekeeping could not read until a few months ago.

Technical workers are sorely needed in every line. For some time past, and at present, dependence was placed on engineers and technically trained men from other countries, many American engineers having gone to the Soviet Union under contract to assist in their problems. It will, of course, be years before the Soviet Union can furnish its own technical workers in a number adequate to their undertakings; but they do not propose always to depend on America for help, but propose to help themselves by training their own people. They enlist help of outsiders at present chiefly for practical problems, for teaching requires a familiarity with the languages of the Soviet Union which few outsiders possess. To bring up the level of education to that of outside countries and even to surpass the educational level of other countries is the fond hope of the communists. They recognize as everybody must, that they have a long hard road to travel.

Extension Work in Agricultural Education

When I visited the Institute for Correspondence Courses in Moscow, the heads of the Institute asked me many questions about agricultural education in the United States. When in my discussion I came to talk about our extension work, their interest at once greatly increased, for they hope some day in the not too distant future to establish work of a somewhat similar nature. The discussion became so enthusiastic because of their deep concern for details that they finally asked me if I would give a lecture on American extension work before the heads of all their departments. While I at once explained that my contact with extension work had been merely as a minor worker and that I had never been concerned much with its administration, and while I protested that there are in the United States hundreds of men who know far more about the extension work than I shall ever know, their

Flies are troublesome and dangerous. From a colored poster used in education in sanitation.

reply was that they did not happen to have any of these better informed men right at hand, while I was right on the spot. Under these conditions I consented to make the speech, but finally was unable to do so because we were called home. I am, as a matter of fact, rather sorry that I did not have this opportunity, for I believe that our extension work is based on a correct principle, that of personal contact, and I should have been glad to emphasize that point. I am sure also that I shall never have a more enthusiastic or more interested audience than I should have had with that group of people.

Ithaca, New York.

Honey Prices in the United States

Edwin C. Voorhies[1] and Frank E. Todd[2]

A Study of Both Prices to Producers and Retail Prices During Past Ten Years

The Bureau of Agricultural Economics of the United States Department of Agriculture began publishing a honey market news report in 1917. Since that time data from different sections of the country have been given in detail from which average monthly prices have been compiled and published in the Agricultural Yearbooks of the United States Department of Agriculture.[3]

In this article the authors have attempted to compile "United States producers' and retailers' prices" for both extracted and comb honey. The results are the series of prices given in tables 1, 2, 3, and 4. These tables may contain some inaccuracies, but the basic data have undoubtedly been accurately reported. So far as the authors are aware, these tables are the only compilations of this nature in existence. Gleanings in Bee Culture has been receiving honey-price information from widely scattered sections of the country. From these data the authors have compiled

(1) Prices at which large lots of extracted honey have been sold by producers (tables 1);

(2) Retail prices of extracted honey (table 2);

(3) Prices received by producers for comb honey (table 3); and

(4) Retail prices of comb honey (table 4).

The manner of compilation is such that the data reported in the previously mentioned tables can be kept up to date. The back numbers of Gleanings in Bee Culture have been examined and an average price for each month has been computed. What is called the median, or middle price, has been taken as the average. The median is more accurate for this type of calculation than the simple average, which most people are accustomed to use. For example, if five lots of honey sold at 2, 3, 4, 5, and 20 cents per pound, the average price according to usual calculations would be 6.8 cents per pound. On account of the one high price, 20 cents, this average is higher than four of the five prices enumerated. By using the median, or middle number, 4, this difficulty is avoided. At a glance it can be seen that the median number, or 4, is closer to 2, 3, 4, and 5 than is 6.8—the latter being the usual average given. In table 1 each monthly price is the median, or middle one, computed from 20 to 30 reports made to Gleanings in Bee Culture by honey producers. The average yearly price given in table I is a simple average (computed in the usual manner) of the twelve monthly prices for each year.

These monthly prices are shown graphically in figure 1. Producers' prices for this period were highest in 1924 and 1925. Honey crops were especially light in 1924-1925.[4] From the high point reached in June and July, 1925, there was a continuous downward trend until April, 1933 (table 1). The lowest prices for the period were during the first three months of 1933. In April, 1933, the downward course in prices was apparently checked and a slight rise occurred. In several of the

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[2]Associate Apiculturist, Pacific States Bee Culture Laboratory, Bureau of Entomology, United States Department of Agriculture.

[3]U. S. Dept. Agr. Honey: monthly average price in producing sections and at consuming markets. U. S. D. A. Yearbook 1933: 496.

[4]Voorhies, Edwin C., Frank E. Todd, and J. K. Galbraith. Economic aspects of the bee industry. California Agr. Expt. Sta. Bul. (in press).

other years under consideration, prices during April have been lower than those for March.

The United States Bureau of Labor Statistics publishes monthly data on the retail prices of food in general and on many specific foods. This material is obtained not only for the United States as a whole, but also for individual cities. Nothing is available from this source on honey prices. Beekeepers, however, have reported to Gleanings in Bee Culture the "retail price to consumers in your locality of extracted honey in 5-pound pails." The material in table 2 has been compiled from the monthly issues of Gleanings in Bee Culture in the same manner as was done for producers' prices in table 1. The number of individual reports from which each price has been compiled is large, sometimes as many as 60.

The retail price data have also been plotted in figure 1. Two or three interesting observations can be made by again looking at this chart. Perhaps the first movement in retail prices that will attract the attention of the observer is the rapid decline in 1930, 1931, and 1932—the fall during these years being greater than in producers' prices. The spread between producers' prices and retail prices through 1930 averaged between 10 and 11 cents per pound. In 1931 this dropped to 8.5 cents, in 1932 it was 7.4, and in April, 1933, it was 5. The resistance of retail prices to a drop can be seen also. The drop in retail prices tends to lag behind producers' prices. The retail price of honey at the present time is lower relatively than the retail price of foods in general.

Producers' prices of comb honey compiled from data in Gleanings in Bee Culture are shown in table 3. These data show clearly certain facts, some of which are undoubtedly known to the comb-honey producers, others probably are not. Evidently most producers sell the bulk of their comb honey during the five months beginning with September, although in some years August sales are sufficiently numerous to permit a price calculation. Sales during the six months beginning with February are almost nil. Producers' prices of comb honey declined from 1924 to 1932, although relatively the fall was slightly less than that for extracted honey.

A similar compilation of retail prices of comb honey is shown in table 4. The percentage decline in the retail price has been greater than that in the producers' price for comb honey, and has also been far greater than the decline in the prices of other foodstuffs.

It is hoped that these data will prove to be of use to the beekeeper. With so many attempts at industry stabilization, the

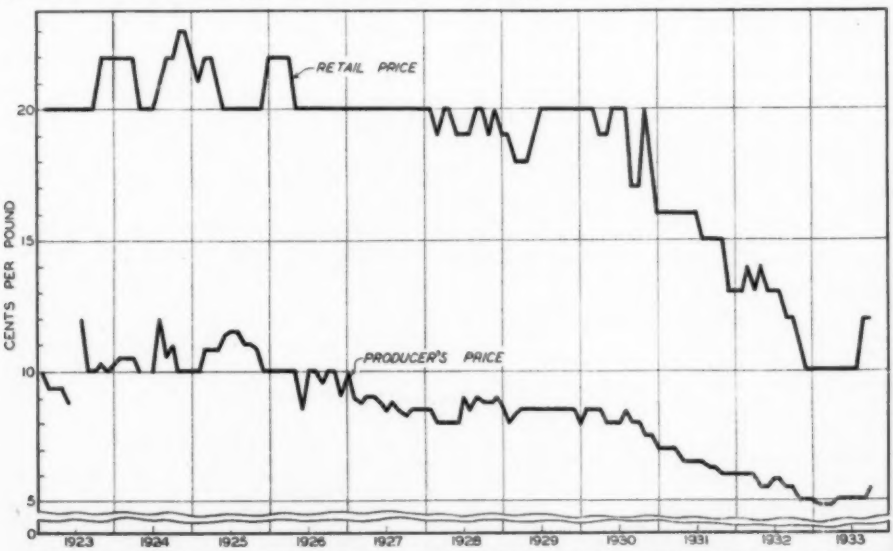

Fig. 1.—Producers' and retail prices of extracted honey, United States, 1923-1933. A definite lag is shown by retail prices in following those received by producers. The relatively high producers' prices of 1925 were not reflected in retail prices until the latter part of that year and the first few months of 1926. The downward trend in producers' prices beginning in 1926 is not clearly reflected in retail prices until 1928. Between the latter part of 1930 and the end of 1932 retail prices tumbled precipitously.

TABLE 1.

Prices received by producers for extracted honey in the United States, 1923-1933 (cents per pound.)

Month.	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
January	10.0	10.5	10.0	10.0	9.0	8.5	8.0	8.5	7.0	6.0	4.8
February	9.3	10.5	10.8	10.0	8.8	8.0	8.3	8.5	7.0	6.0	4.8
March	9.3	10.5	10.8	10.0	9.0	8.0	8.5	8.5	7.0	6.0	4.8
April	9.3	10.0	10.8	10.0	9.0	8.0	8.5	8.0	6.5	5.5	5.0
May	8.8	....	11.4	8.5	8.8	8.0	8.5	8.0	6.5	5.5	5.0
June	...	10.0	11.5	10.0	8.5	9.0	8.5	8.0	6.5	5.8	5.0
July	12.0	12.0	11.5	10.0	8.8	8.5	8.5	8.5	6.5	5.9	5.0
August	10.0	10.5	11.0	9.5	8.5	9.0	8.5	8.0	6.3	5.5	5.0
September	10.0	11.0	11.0	10.0	8.3	8.8	8.5	8.0	6.3	5.5	5.5
October	10.3	10.0	10.8	10.0	8.5	8.8	8.5	7.5	6.0	5.0	...
November	10.0	10.0	10.0	9.0	8.5	9.0	8.5	7.5	6.0	5.0	...
December	10.3	10.0	10.0	10.0	8.5	8.5	8.0	7.0	6.0	5.0	...
Average	9.9	10.5	10.8	9.8	8.7	8.5	8.4	8.0	6.5	5.6	...

Source of data: Computations by authors based upon average (median) of prices reported by honey as quoted in Gleanings in Bee Culture, monthly issues.

TABLE 2.

Retail prices of extracted honey, United States, 1923-1933 (cents per pound).

Month.	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
January	20	22	21	22	20	20	19	20	16	13	10
February	20	22	22	22	20	19	18	20	16	13	10
March	20	22	22	22	20	20	18	19	16	13	10
April	20	20	21	20	20	20	18	19	16	14	10
May	20	20	20	20	20	19	19	20	16	13	10
June	20	20	20	20	20	19	20	20	16	13	10
July	20	21	20	20	20	19	20	20	15	13	10
August	20	22	20	20	20	20	20	17	15	12	12
September	20	22	20	20	20	20	20	17	15	12	12
October	22	23	20	20	20	19	20	20	15	11	
November	22	23	20	20	20	20	20	18	13	10	
December	22	22	22	20	20	19	20	16	13	10	
Average	21	22	21	21	20	20	19	19	15	13	..

Source of data: Computations by authors based upon average (median) of retail prices of 5 pounds of extracted honey in tins as quoted in Gleanings in Bee Culture, monthly issues.

TABLE 3.

Prices received by producers for comb honey in the United States, 1923-1933 (dollars per case).

Month.	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
January	4.30	4.78	4.75	4.00	4.13	4.00	4.00	4.00	*	*	2.50
February	4.50	*	*	*	*	*	*	*	*	*	2.50
March	4.25	*	*	*	*	*	*	*	*	*	*
April	4.00	*	*	*	*	*	*	4.25	*	*	*
May	*	*	*	*	4.80	*	*	*	*	*	*
June	4.25	4.63	*	*	*	*	*	*	*	*	*
July	4.50	5.00	*	*	*	*	*	*	*	*	*
August	4.32	*	4.50	4.25	*	4.12	4.00	*	*	*	*
September	4.70	4.90	4.50	4.13	4.00	4.39	4.00	4.00	3.60	2.60	*
October	4.50	4.75	4.38	4.13	4.00	4.00	4.00	3.70	3.50	2.60	
November	4.65	4.78	4.06	4.13	3.80	*	3.75	3.75	3.25	2.45	
December	4.75	4.63	4.50	3.78	4.00	4.50	4.12	4.00	3.25	2.50	

*Average is not given because of insufficient number of prices quoted.

Sources of data: Computations by authors on the basis of the average (median) prices paid producers for Fancy and No. 1 comb honey as quoted in Gleanings in Bee Culture, monthly issues.

TABLE 4.

Retail prices of comb honey in the United States, 1923-1933 (cents per section).

Month.	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
January	27	30	30	30	25	25	25	25	25	20	15
February	26	30	30	30	30	25	28	25	25	20	15
March	27	30	30	30	30	25	28	25	25	20	15
April	27	30	30	28	30	25	27	25	25	20	15
May	30	30	33	30	28	27	27	26	25	20	13
June	30	35	30	29	25	27	27	25	25	20	15
July	30	30	30	30	25	26	27	25	25	20	15
August	30	30	30	30	28	28	25	25	20	18	15
September	30	32	30	30	29	26	25	25	20	18	17
October	30	30	30	25	26	25	25	25	20	16	
November	30	30	30	30	28	25	25	25	20	16	
December	30	30	30	30	25	28	27	25	20	15	
Average	29	31	30	29	27	26	26	25	23	19	

Source of data: Computations by authors on the basis of the average (median) retail prices of Fancy and No. 1 comb honey as quoted in Gleanings in Bee Culture, monthly issues.

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more that is known concerning any industry easier will be the task of making adjustments. On the technical side of the honey industry there seems to be an abundance of information. On the economic side it suffers in comparison with other and less important industries.

Berkeley, California.

A Real Beeman

E. R. Root

How He Operates 500 Colonies With Only the Help of His Wife

How many colonies can one man operate without employing help? The answer to that, you say, is dead easy. It all depends on the location, the equipment, the man, and whether he has one or more members of the family who can help in the rush. For the purpose of this story I am going to put the emphasis on the man and his wife, and son or daughter. The locality may be ever so good but without the right management—hand, plus head work—failure may be the result sooner or later.

Well, how many colonies can a good man and one member of his family take care of during a series of years and make a fair living? Two hundred colonies in a good locality is not enough, unless there is a farm in connection. Five hundred would be nearer right; seven hundred and fifty, too many. One thousand colonies—surely that is too many because such a number would mean the breaking of the health and nerves of either the man or his wife or both; but that is not all.

When a sturdy couple has made a success of operating 500 colonies, the temptation is strong to buy out the fellow with a couple hundred colonies that don't pay. Shortly after, there will be another man who will sell out cheap. It generally happens that the one man who made money with his 500 colonies is now loosing money with 750 or 1000 colonies. A poor season may come; there is a note at the bank to meet. It comes due. The banker refuses to renew unless a mortgage is placed on the property. The poor man has to employ extra help. It is incompetent and unreliable. Good help during normal times can not be had just during the rush. The out-of-a-job-most-of-the-time help lets foulbrood get started, or lets the bees starve. Or it doesn't understand the fundamental principle of so managing brood rearing that there will be a large force of bees at the right time. Worse than that, the work and worry, one or more mortgages, with no prospect of ever paying off, breaks our one-time good beekeeper and his wife—breaks them financially and physically.

What I have told is not a fairy tale. No, indeed, it is all too common among both beekeepers and farmers. When depression comes it makes the poor debtors think that the bankers are rascals and the captains of industry are robbers that should have every honest dollar they ever earned taken away. "It is all the other fellow's fault."

Advantages of Well-Managed Small Business

Now with this lengthy dissertation on the folly of biting off more than one can chew, I wish to introduce to you a real beekeeper who operates 500 colonies with only the help of his wife and occasional help from the daughter who is just getting where she can be of real service. I refer to A. A. Doenges of Defiance, Ohio, up in that sweet clover, alfalfa, red clover, white clover, and alsike clover district. Yes, he has a good locality, but he is a good beekeeper, one who knows how to keep down his investment in beekeeping.

Fig. 1.—Mr. A. A. Doenges, his wife and daughter.

He and his wife are of the sturdy, thrifty kind of folk who know how to sail close to shore when a storm comes. Look at Fig. 1. You will see in both husband and wife square shoulders, vigorous, hard-working people, and the daughter is a chip off the old block. They had a poor season last summer. I'll leave it to you that they are not worried. They are a happy family as Mrs. Root and I can tes-

tify after having had dinner with them. Sometimes I wonder why beekeeper wives we meet are such good cooks.

How Mr. Doenges Cuts Corners

Let us see how he keeps down his investment during these times. He needed a truck. Second-hand ones were mostly worn out. He finally found an old second-hand five-passenger Dodge touring car that was so ancient in appearance that a young fellow would have none of it. It had not been driven much and was in fine condition. Mr. Doenges didn't care if it did look out of date. Because of this fact, he bought it for $50. Except for the tires, it was as good as new. It had a good "purr" and would go anywhere in the woods to the outyards. Its narrow tires were just right to fit into wagon ruts in the woods where his bees were located. If he smashed or broke it from overloading he was not out much. He had a more modern car but "this old thing" with the seats removed was as good as a modern light truck that would cost over ten times as much. Besides it had a roof or top over the load.

In the same way Mr. Doenges fixed over a woodshed for his extracting house. In it he has a modern 45-comb radial extractor and an uncapping machine. See interior view in Fig. 2. Why didn't he use his old extractor? Because it was out of date. The new 45-comb outfit would save labor on the part of his women folks. The old Dodge touring car, while out of date also, would do just as much mileage as a modern light truck, but with an investment of less than a tenth as much first cost.

Right here it is pertinent to observe that a new automobile of any kind drops in selling value about 50 per cent the first year.

Where He Locates His Bee Yards

Let us take a look at a couple of his outyards. We will get in that old Dodge because we can't hurt it any by driving through the brush and briers that would scratch up a new machine. We arrive first at the Zimmerman yard, where the bees are placed among the old timber. See Fig. 4. We go a few miles further and come to the Parrot yard located in young timber. See Fig. 5. Mr. Doenges rather prefers this kind of a location because its low bushes furnish an ideal windbreak—no small factor in good wintering. This last view was taken after dark. It is needless to say that I used a time exposure instead of a snapshot.

His Bee Pasturage

In placing his yards Mr. Doenges always has in mind proximity to good bee pasturage. When the farmers change their crops he changes with them, if the crop is one that furnishes nectar. In this locality there is white and alsike clover, sweet clover, alfalfa, and red clover, but let me say parenthetically that this whole country is well covered with bees. The unwritten law of not encroaching on the other fellow in this northwestern part of the state is pretty well observed.

Honey from Red Clover

While in good seasons Mr. Doenges gets honey from all of the above mentioned clovers, I was surprised to hear him say that perhaps one-fourth of his entire crop

Fig. 2.—A corner of Mr. Doenges' extracting house, equipped with a modern extracting outfit.

came from red clover. Red clover? Yes, I mean red clover.

A Short Tube Red Clover

The production of red clover seed is quite an industry in this part of the state. I was surprised again that the farmers are growing a special red clover with shorter corolla tubes. Does that explain why the Doenges bees get honey from red clover? If the farmers here grow a short-tube red clover, is it possible that this same strain is grown elsewhere in the state, and if not, why not?

Another inquiry comes to my mind. It is pretty generally believed that the old-fashioned bumblebees that were so plentiful in years gone by, are all but gone, thanks to the naughty boy and the ignorant farmers who have been batting them to death every time they run across nests of these valuable insects. The skunk, now protected by game laws, also has been taking his toll of bumblebees' nests.

Well, the farmers are still growing red-clover seed. Certainly the red clover heads are not pollinated as of old by bumblebees. The answer is by honeybees, says Mr. Doenges. He did not say so, but I raise the question: Is it possible that honeybees have been selecting the heads with the shorter tubes and that through a process of evolution have been developing a strain of red clover that has shorter tubes than the red clover of 50 years ago?

Some work done at Holgate, Ohio, under government supervision in co-operation with Ohio State University goes to show that honeybees can and do pollinate red

Fig. 3.—This young lady is proud of her miniature castle carved out of beeswax.

Fig. 4.—One of Mr. Doenges' out-apiaries located in an open woods.

clover. See Gleanings in Bee Culture, page 614, October, 1932.

The Women Folk of the Doenges Family

I want you to take another look at Fig. 1, not at Mr. Doenges this time, but Mrs. Doenges. She is the other beeman of the family. She can work among the bees, take off honey or extract it. When Mr. Doenges had to go to the hospital for an operation during the rush of the season at the time he could least be spared Mrs. Doenges went out into the yards and with the help of a hired man, kept on with the work until her husband could take charge again. Her picture shows a strong face and a body that can do hard work, the kind of work that requires a real beeman.

Fig. 5.—Mr. Doenges prefers to locate his apiaries in an open space among young trees.

The Castle in the Air

So much for the father and mother. I am not going to skip the girl. I said she is a chip off the old block and so she is. I didn't dare ask her age, but I should say she is around sweet sixteen. While she does not go out to the yards, she knows how to be her mother's best man in the extracting room. She is the pride of her parents.

In her school work she has taken a likening for art. It appears that her class was to bring in some original piece of work and she conceived the idea of building a castle of pure beeswax. In Fig. 3, we have a sample of her work executed when she was much younger. It is solid beeswax and weighs 15 pounds. It is a real castle in the air. She won first prize for her originality and she deserved it.

Medina, Ohio.

Proposed National Marketing Agreement

C. L. Corkins

Can Beekeepers Hope That Such an Agreement Can be Brought About in This Country?

Will it work? That question was significantly placed in the sub-heading of the digest of the proposed national honey-marketing agreement last month by one of the bee journals publishing this material, and it is a question which for months has been haunting many of us who see the necessity of this or some such agreement if the beekeeping industry is to survive through the present industrial and agricultural revolution. Will it work? The answer is NO,—unless during the coming

months we see the miracle of a mad rush by the beekeepers into the folds of the state, regional, and national organizations and their recognition of and loyal subservience to their chosen leadership of such organizations.

Beekeepers Are Rugged Individualists

That WOULD be a MIRACLE! Anyone who has made even the most casual study of the history of organized beekeeping in America or has had any experience whatsoever in any beekeepers' organization, recognizes the almost hopeless task of bringing order out of the chaos of rugged individualism, or self-sufficiency, or simple disinterest, or whatever it is that keeps beekeepers from binding themselves for the common good. At the present moment our only national organization, the American Honey Producers' League, is but a shell, rather than the concrete structure it should be. Our state associations, for the most part are being held together by a few priceless souls who don't know when they are licked. It is mighty doubtful if the sum total membership of state associations represents more than 10 per cent of the honey production of the country. Even that noble institution, the American Honey Institute, which, more than any other, is so desperately needed by the beekeeping fraternity today, and against which not one word of criticism seems to be offered, struggles for a mere existence with 99 per cent of the beekeepers sitting idly by. There is nothing in the whole picture of organized beekeeping in America which would give the least hope that the beekeepers of their own initiative will ever become banded together sufficiently to take advantage of the A. A. A. program. To me, there is only one possible chance in this direction and it will be the purpose of this "explosion" to point out that course and let the leaders seize upon it if they will.

From the time of my first contacts with the office of the A. A. A. in Washington to the present moment, the theme of its attitude on a honey marketing agreement has been that the beekeepers are not sufficiently organized to do anything about it. Others have had a similar experience.

Our Federal Government under the authority of the N. R. A., has commanded industry to write its own codes in a manner acceptable to Uncle Sam, or else Uncle Sam will write and enforce them himself. There has been a rather firm (though growing gentler with age and experience) insistence upon the part of government that industry join hands with the President of the United States in this noble experiment of social and industrial reform to the end that prices of all industrial products are rising. Yes, even bee supplies are now N. R. A. produced and cost more.

So far as the basic agricultural commodities are concerned, the Federal Government has mapped out the program, then taken it out to the farm folks, almost right to their very doorsteps, and, in substance, has said: "Here it is. You had better take it for it is so drawn up that unless you do, you will help pay the bill, be penalized on the price of your produce and reap none of the rewards."

Government Spends Lavishly to Help Other Industries

The point of importance is that the Federal Government has spared neither money, man power, nor propaganda to make the people co-operate in these new enterprises which are raising the prices of the bare necessities as well as the little luxuries of life, to the ultimate consumer, the beekeeper included. On the other hand, up until the present time at least, our Federal Government through the Miscellaneous Products Division of the A. A. A. (which includes honey and all other agricultural products except wheat, cotton, corn, hogs, rice, tobacco and dairy products) has said in substance: "Here is the law. Come and take advantage of it if you are sufficiently organized and interested to do so. It's your job, not ours. Go ahead and write the agreement, get organized, get the signatures, and set up your administration; then we will look it over and if it suits us, all right."

In casting about for a means of putting over the program on the basic agricultural commodities, the A. A. A. officials quickly seized upon the only national institution which was sufficiently organized which had competent man power, and which reached far enough out into the farm communities and homes to accomplish this stupendous task. That national institution is our system of Agricultural Extension Service, with state and county units throughout the land. True, this service had been lambasted on every hand by disgruntled and infuriated taxpayers, organized and unorganized, locally and nationally, and was condemned by everybody from farm folks to big business. The federal director of the budget, with new-

born powers of dictatorship, was just reaching out to clip the wings of the Extension Service 25 per cent on federal funds when the process was stayed by executive order at the eleventh hour, pending sanction of the forthcoming session of the Congress. But the clipping process of the state legislature and county governments had already been completed. In our own state, the state funds to the Extension Service were slashed more than 50 per cent at one fell blow. This is typical of the entire trend.

Thus a crippled Agricultural Extension Service was commandeered to accept the task of putting the A. A. A. program for the basic agricultural commodities across in addition to its regular job. Where county agents were lacking and needed, the A. A. A. administration saw to it that they were hired and paid. And they saw to it, also, that there was nothing lacking in the central office to keep the Extension Service going. First, the wheat and cotton program was jammed through, then the corn-hog program came out, and now the dairy-products agreement. The personnel of the State Extension Services has been working day and night. Nerves are frazzled and tempers are on edge, but the job is being done and done well, in spite of blunder after blunder in the formulation of the program which they are selling.

Beekeepers Apparently Represent the "Forgotten Man"

The major point of importance in this picture is that the government is spending public money to make our bread, our clothing, our bacon, our milk, our butter cost more, and, it is hoped, net the producer more cash. Is your government spending money to help the beekeeper get more for his honey? At the present time the answer is NO. Yet it has been the oft-repeated policy of our Chief Executive that there shall be no "forgotten man" in the New Deal. Are the 800,000 beekeepers of America to be forgotten?

First Requisite is Better Organization

Of course, the honey marketing agreement won't work—in fact, it won't even be brought into existence—unless the beekeepers are fully organized far beyond the point of our present conception. The Agricultural Adjustment Act under which such an agreement is authorized, stipulates that the Secretary of Agriculture may contract with "organizations of producers," not individuals. The tentative honey marketing agreement drawn at Chicago is, therefore, interwoven around our present beekeepers' organizations, anemic skeltons though they be.

Our national organization and the national honey marketing agreement committee can get the agreement into shape, clear up the requirements of the A. A. A. officials as to its content, contact the state associations, and get such limited general publicity as is possible to the few beekeepers who read bee journals, but there our heads will jam squarely into a stone wall. Why? Because it will take real money to build up our national and state organizations to the point where they can command sufficient production (65 per cent) in their membership representation to either sign the agreement or administer it efficiently once it were consummated. If we had the money and the man power, with an issue as vital as this agreement, we could still find enough cash in the pockets of the beekeepers with which they could pay their association dues if only the message can be taken to them directly and personally, as it has been with the other agricultural products. But 3 to 5 cents per pound for honey for two years certainly means that the beekeepers can't and won't dig down to do this job of organization. And under present conditions, they shouldn't. Under the New Deal the government is opening the purse strings of the public for this purpose, as a national welfare measure. Even the future is being mortgaged to do it.

Think backwards about 17 years, folks. Who put an artificial stimulus into our national beekeeping industry, the pains of which we are still suffering? Then, as now, the banner of the "National Welfare" led our federal and state governments to appropriate money to carry the message of more and better beekeeping to every nook and cranny of the nation. Its high time that the government should step back into the picture with a much different program and help us to get ourselves out of the jackpot which they helped us to get into.

How It Could be Accomplished

Concretely, my suggestion is that if the marketing agreement is ever to work, we will have to have the direct help of government in a big way in the job of organizing our beekeepers for the task. If the beekeepers were really fully organized on this issue, then certainly it will work if any other marketing agreement under the A. A. A. will work. And some of them are

working this very moment. If we can place at the head of this honey marketing agreement work in Washington any one of many of our good and well-informed leaders in the honey industry today and give him 25 assistants working through the state Agricultural Extension Services and their county organization for one year or less, the job is as good as done. This big force of men need not be a permanent arrangement. If the agreement works, the beekeepers and packers can largely keep it going themselves once it is under way.

Can beekeeping make its present voice heard loud enough to bring this to pass? Well, it might try. The effort should be made by the state associations under the co-ordinated guidance of the American Honey Producers' League, together with the assistance of packers, supply dealers and bee publications.

Is it worth while? That's a question for the beekeeper to answer for himself. In answering it for myself, I'm looking at the signposts at the fork of the roads where we as beekeepers stand today. One sign post reads, "Drift on—it's a downhill grade." The other reads, "Look up—a steep grade to stability."

Those who choose the first road are of the school of beekeepers who think that it is best to let things drift as they are, and that governmental interference of any kind will merely increase the burden. They know that conditions are not going to get better for beekeepers soon by this route and that perhaps 50 per cent will have to liquidate on account of present cut-throat competition and unfair practices. But that's all right. "Busted," our outfits will sell for a song which makes it better for the man who can stick it out. Honey will be scarcer and dearer. It's the way of nature's cruel course above which man strives to rise. It's the old story of the survival of the fittest. Put more crudely, it's the proposition of dog eat dog, and the best dog eater wins.

The sign post on the other road was put there by the President of the United States. It calls for a co-operative joining of hands with government by agriculture —by the beekeeper—in an effort to so organize and regulate our industry to the end that all will be forced to deal with his neighbor according to the fair practices which will assure the average man a cost-of-living wage for his honey. And the packer can have an even break with his competitor. It's merely a program by organized beekeeping, backed by the strong arm of Uncle Sam, for the purpose of gently but firmly enforcing each of us in the honey business to live by the Golden Rule, so that every man may have an equal chance of survival. The honey marketing agreement won't sell our honey. It only says that we shall sell it like gentlemen. Those who take the low road will still have to help pay for the gasoline for those who took the high road.

Powell, Wyoming.

Pollen Substitutes

Mykola H. Haydak

Departments of Economic Entomology and Agricultural Chemistry, University of Wisconsin

Experiments in Feeding a Variety of Nitrogenous Foods to Young Bees Under Controlled Conditions

The question of substitutes for pollen has always interested beekeepers. Prominent apiculturists of the past and present have advised the feeding of pollen substitutes to bees when the natural pollen resources were lacking. Most of them thought they observed beneficial results from the feeding of various foods other than pollen to bees, but their conclusions were based mostly upon observations of bees in their natural environment, and one could object to their conclusions because there might be a possibility of some pollen being available. It is obvious that only those experiments in which bees are fed with the various food materials under controlled conditions will prove whether or not these materials can serve as substitutes for pollen.

Earlier Feeding Experiments

As early as 1867 A. I. Root performed such experiments. He kept several colonies of bees in a glass house for four or five months during the winter. He was

able to produce brood and also stop its production many different times by feeding bees flour and then withdrawing it.

R. H. Parker working at Cornell University fed bees in a greenhouse with finely ground rye, wheat, oats, pea meal, corn, and buckwheat and decided they were not beneficial to bees.

Whitcomb and Wilson at the University of Wisconsin fed bees under controlled conditions with rye and wheat flour, both wet and dry as well as split canned peas. They concluded that brood may be reared during the time when such substitutes are given to the bees, but this is not necessarily proof that bees do utilize pollen substitutes in brood rearing, since the control colonies, composed of bees which were shaken on new combs and fed only sugar solution, also reared approximately the same quantity of brood. Also a queen was produced.

Doctor Soudek of Czechoslovakia tried to find a measure for the comparison of various pollen substitutes. He based his investigations on the fact that the pharyngeal glands in emerging bees are underdeveloped, whereas those of bees five to six days old are well developed and active. This is due to the fact that the older bees feed the larvae, and the larval food of these bees is elaborated in the pharyngeal glands. Dr. Soudek assumed that any substance which will cause the development of these glands in a normal manner might be considered as a pollen substitute. He fed newly emerged bees with various foods, followed the development of the pharyngeal glands, and noted the mortality of the bees. After trying out fifteen different pollen substitutes, he decided that fresh egg albumen and dried yeast gave the best results.

Professor Wilson and Mr. Callenbach at the University of Wisconsin fed bees under controlled conditions with flour, corn meal, and yeast. From the results obtained they concluded that the best cure for a pollen shortage is to keep combs that contain pollen so that they may be given to the bees when necessary as recommended by Parker.

Recently very intensive studies on pollen substitutes were undertaken in the Soviet Union. At the Allunion Bee Culture Institute at Tula, many experiments were made by feeding various pollen substitutes to bees. Bees were shaken into new hives on empty combs or frames having only pieces of foundation for starting, then given various food materials under controlled conditions. The quantity of brood fed and the building activity of the bees were noted. Good results were obtained with oat, pea, and soya meals. Rye and wheat flour were fed with fair results. Good results were also secured when milk and eggs were substituted for pollen.

From the foregoing discussion, we see that all the investigators mentioned, except Soudek, were using bees of an unknown age and were following only one or two phenomena in the activity of the bees.

Experiments Based Upon New Methods

The suitability of any food in the nutrition of higher animals is determined by feeding it to young experimental individuals which are kept under controlled conditions. The changes in weight and in size of these animals are recorded, general health is observed, and their general activity noted. In addition with mature animals, the quality and quantity of offspring is determined.

The growth of young animals is characterized, among other factors, by an increase of proteinous materials in their bodies. "The increase of protein, therefore, may be regarded as constituting a more accurate measure of growth in the narrower sense than mere increase in weight" (Armsby). In other words, if one determines successively the total nitrogen content of the body of the experimental animals he can conclude whether or not growth processes are occurring in the animal.

While working during the summer of 1931 at the United States Bee Culture Laboratory at Washington, D. C., the writer followed the changes in the total nitrogen content during the life of the imago of the worker honeybee. It was found that emerging bees had the lowest nitrogen content, but that it increased with the aging of the bees, the greatest quantity occurring in the heads and abdomens about the fifth day, and in the thorax at about 20 days. The changes in weights of the experimental bees at different periods were also secured. This increase in nitrogen signifies that development continues to occur in the bee body after emergence. In other words, the same methods which are applied to the higher animals can be used in nutritional work with bees.

Therefore, it was decided to determine the suitability of any substance as a food

of the honeybee by feeding it under controlled conditions to young bees, which had never eaten pollen, by obtaining the following data:

1. The changes in weights and the nitrogen content of young bees fed with various pollen substitutes.

2. The health condition of the experimental bees (mortality).

3. The quality of the emerging bees reared by the colonies fed with pollen substitutes (weight and nitrogen content).

4. The quantity of the reared brood.

5. The building activity of the experimental bees.

For the purpose of the present work it was necessary to obtain in considerable quantities young bees which had never eaten pollen. While working in the United States Department of Agriculture Bee Culture Laboratory the writer found that the vast majority of bees start to eat pollen between 12 to 18 hours after emergence. Only a few bees 12 hours old were found to have pollen in their mid-intestines. Therefore, the following procedure was adopted:

Several combs with sealed brood in which pupae were just ready to emerge were placed in a hive in a constant temperature chamber adjusted to 33° to 34° Centigrade. Young bees were allowed to emerge during six and ten-hour periods. After each such period the hive body with the combs were taken to a greenhouse and the young bees were brushed into a hive located in an isolated compartment.

The bees ate the food given to them and were unable to secure any other from the outside. The following food materials mixed with honey were used: skim-milk powder, dried yeast, fresh whole milk, egg white, egg yolk, whole egg, and rye flour. A colony in which emerged bees were fed pollen and honey was held under the same conditions to serve as a control.

Comparative Results of Various Pollen Substitutes

For a better understanding of the results secured, a system of indexes was used which gave a comparative figure between all the foods. An examination of all indexes for the points investigated shows that the most valuable pollen substitute tried was dried yeast. Fresh whole milk and skim milk powder follow it with about one-half and one-third, respectively, of the value of pollen as a bee food. Whole egg and egg yolk have about one-fifth of the value of pollen. Egg white is about one-seventh as effective as a bee food as is pollen, and rye flour is almost worthless as a pollen substitute for bees.

Conclusions

The following conclusions were made from the results of these experiments:

1. Young bees developed their bodies to an approximately normal extent when fed with dried yeast, fresh whole milk, skim milk powder, whole egg, egg yolk, and egg white, instead of pollen. Rye flour did not produce a satisfactory development of the bee body.

2. The mortality of bees fed with various pollen substitutes varied to a great extent, the largest being in the colony fed with rye flour (52 per cent), and the lowest in that fed with the dried yeast diet (15.47 per cent).

3. Brood was reared by all the experimental colonies, except that fed with rye flour.

4. The young bees produced by all the experimental colonies under investigation were in general equally well developed.

5. A certain increase in the nitrogen content of the young bees was necessary before they started to rear brood. This increase in the experimental bees was better than 30 per cent.

6. Young bees which were under-developed due to lack of suitable nutrition were found to be able to restore their bodies to a normal limit as soon as they received proper food. This phenomenon is of great biological significance.

7. The quantity of the brood reared varied widely. The largest quantity was in the dried-yeast-fed colony and the smallest in the one fed on egg white, but in both these cases it was less than in the control.

8. Death of pupae in the stage just before changing to adults was observed in all, except the control and dried-yeast-fed colonies. The greatest death rate was observed in the colony fed on egg white.

9. It was noted that bees fed on fresh whole milk built out foundation more rapidly than any of the others. This is in accordance with facts presented in literature.

10. The use of fresh whole milk sweetened with sugar as a satisfactory pollen substitute may be recommended. It is the cheapest, most common, and most conveniently prepared as a bee food. Sour (not putrefied) milk is apparently harmless to bees.

Madison, Wisconsin.

Travel

I shall never forget the first time I slept (or rather did not sleep) in a Pullman sleeper. I was going to the Chicago World's Fair forty years ago. I got into the upper berth somewhere in Iowa, and we were supposed to get into Chicago about 7 o'clock next morning. If I slept a wink, I did not notice it. The car rocked back and forth so that I rolled around like a marble in a washbowl. There wasn't much danger of my rolling out, still I wondered if we would hit a high bump in the road if that might not be possible. And what would the people say if I should come avalanching down among them in my nightie! Can you blame me for not sleeping with such thoughts chasing themselves through my mind? As I was not acquainted with sleeping cars, I did not know what the porter was for. I was afraid that if I went to sleep, I might never be found away up there, and when I woke up I would be goodness knows where.

When it began to be light, I looked through the curtains and through the window opposite I saw we were in a city. There were houses as far as I could see, and some one mentioned the fact that we were in Chicago. I was scared stiff. Here we were in the city and I was not dressed. I began to dress in frantic haste trying to stand on my head while I pulled on my trousers. I nearly pulled off a trouser leg while doing this. I jerked a suspender over my shoulder when, snap! it came up against the back of my neck; the elastic part had pulled loose from the leather. I was now in a wild panic. What could I do? Not a single pin or needle or piece of string did I possess with which to mend that suspender. I had no belt. No, sir-ee, my pants just wouldn't stay up unless I could mend that suspender. Oh! how I longed for my faithful baling wire and pliers.

Every little while the brakes would grind and the train stop; I would think we were there and I would have to jump off or most anything might happen. When all seemed lost an inspiration came to me. It did not come from above for I was at the top as it was. It must have come from below; anyway I had it. I took my pocketknife and punched some holes in the leather of my suspenders and some more in the elastic. Then I borrowed a shoe string from one of my shoes and sewed that plagued suspender together so tight is just couldn't come apart.

The rest of my dressing went ahead with no unusual incident but with plenty of speed. I put on my shoes but did not lace both of them. I laced just one. One sock was missing. Last seen was when it went into that infernal little fishnet. I put the other sock on the foot that had the shoe without a string. In that way certain irregularies would not be so noticeable.

"We will not be to Chicago for about three-quarters of an hour."

Later, I found the sock tangled up in my vest, but there was no time to put it on so it went into the pocket of my overcoat. My shirt went on over my head, for that was the way we put them on 40 years ago. I did not stop to button it up, but put my necktie into the other pocket of my overcoat. I then put on my overcoat, turned up the collar, slid down from my roost and made for the door.

I met the porter coming with a ladder but he was too late to do me any good. He said politely, "You are up early. We will not be to Chicago for about three-

(Continued on page 62.)

From the Field of Experience

A QUEEN PAINTING CAGE

Arrangement for Holding Queen Without Injury While Paint Is Applied

Painting queens is a time saver, and essential to accurate records. For this work we have developed the following simple equipment:

Bend a 2" by 5" piece of ⅛" mesh galvanized screen over the end of a 3" piece of lath. Bend the edges around the lath and sew with frame wire. Tack a bunch of absorbent cotton across one end of the lath. Place the open end of the cage over the queen. When she runs up in the cage follow with the lath plunger.

The paint made with lemon chrome, vermillion, or chinese white paint powders and tincture of benzoin is shaken in a tiny screw capped bottle. Holding her against the end of the cage with a light pressure of the cotton, paint the queen thoroughly on the thorax only with a piece of fine grass.

We do not clip queens, but have painted them for 5 years. It makes her easy to find, tells her age, and lets us know when a valuable daughter has taken her place. All purchased queens are marked before introduction, so we do not blame the shipper for the character of any hiding assassin. We do not paint queens until they are laying.—Arthur M. Southwick, Waban, Mass.

USING HONEY FOR MONEY

A Little Sample of Those "Good Old Days" of Bartering

Last March, the closing of all banks brought about by the banking holiday, added more weight to a burden that was even then almost overwhelming. Crops had been poor, due to drouth, and one bank failure had caught many farmers. Though many were holding corn, prices for that commodity permitted small purchasing power. The thermometer had hovered several degrees below zero for many days—everything seemed paralyzed including the honey business.

Possession of money was a rariety but folks used to get along without money and we had a honey crop to dispose of. So we inserted a small advertisement in one of the newspapers:

Will trade honey for potatoes, cobs, wood, apples, meat, vegetables, or what have you? Bring containers! Nielsens' Apiaries.

Then we awaited results. We did not have long to wait. We were showered! We traded for fuel, meats, lard, popcorn, rents, wool batts, house furnishings, typewriter, vegetables, in fact, anything we could possibly use or dispose of. The surplus we disposed of to stores and to other consumers by using the telephone. We had not anticipated such a deluge and at times our house resembled a storage company. Marketing had indeed been a problem with those with whom we traded.

Though this was a rather cumbersome method of transacting business and we would not particularly care to go back to the days of bartering, it helped in a dificult situation and it may be applied to help other beekeepers and communities. As the deposits in our three banks are still unavailable we may need to repeat last year's performance. Crops locally are poor. That experiment has most decidedly had a silver lining for we gained many new customers who have returned repeatedly to buy honey, paying cash for it.—Mrs. Benj. Nielsen, Aurora, Nebr.

BEEKEEPING IN MASSACHUSETTS

Many Colonies Kept Chiefly for Pollination Purposes in the Bay State

Not much is heard about beekeeping conditions in Massachusetts. Perhaps it is because the state is situated too far north for commercial queen breeders and package-bee companies. It may be that its localized honey plants are termed as unimportant when viewed as a whole. And it is possible that Massachusetts remains in the background of the beekeeping world because of its inconsiderable bee population.

Poor organization on the part of its beekeepers can not be blamed for Massachusetts' failure to line up in the list of prosperous bee states. Small community beekeepers' associations composed of bee lovers flare up here and there. Their sole purpose is a friendly get-together of persons

owning a few colonies of bees for a hobby. They die out quickly; for the zest of commercial competition which keeps the interest whetted is lacking.

The Massachusetts Beekeepers, a cooperating group of men, however, on whose roll are the principle commercial beekeepers of the state, is awake to the business aspects of organization and the opportunities presenting themselves to the beekeepers of the state. The steadily increasing demand from cucumber growers and from orchardists for over-wintered Caucasian colonies for pollination, has opened a peculiar market for bees which promises to be the foundation upon which Massachusetts beekeepers can claim recognition for their prouct. Pollination is now considered a product.

Sweet pepper bush (clethra alnifolia), which yields a water-white honey, is much sought after by beekeepers in the eastern part of the state. It grows in the wooded swamps and is thickest in the Hockamoc Swamp region forty miles south of Boston. Its blooming period is in early August. The bush yields heaviest every third year.

Massachusetts beekeepers are making the most of what they have to work with. Some day, it is hoped, Massachusetts will be acknowledged as at least belonging to the beekeeping world.—Fred Stier, Dedham, Massachusetts.

THE MATING OF THE QUEEN BEE

Majority Mate the Sixth Day After Emergence if in Small Mating Boxes

From the earliest times the sex problem of the honeybee has engrossed the attention of bee writers. So far as known Huber was perhaps the earliest student of bees to discover the truth about the mating of the queen bee and publish the results of his studies.

Huber was at once assailed on account of his observations, and, though his statements were accepted at once by thoughtful bee students, there were those who could say nothing too nasty and caustic. Of all writers of that time Huish was perhaps the most caustic. A witty if not a wise man, Huish, under the deep feeling that he knew more about bees than any other man living or dead, devoted a large part of his book (A Treatise on the Nature, Economy and Practical Management of Bees) in deriding the findings of Huber. Frequently calling those who thought differently from him asses, he, in his book, makes himself the biggest ass of all.

It would make this article too long to go into the various interesting ideas which prevailed in old times relative to the sex biology of the honeybee. Many touched only lightly upon it, partly because of ignorance but largely because of a sense of modesty. Langstroth in his first edition printed one small paragraph on the mating of the queen bee—in Latin. The good gentleman feared to put it into English lest young people might read it and be harmed. Or, did the astute man know that he would thereby stimulate the young readers to get out their Latin lexicons and learn what the blind paragraph meant? I did just that.

Every queen breeder has seen virgins take flight. Many know that a virgin usually takes many flights before the act is consummated. She at first goes scarcely 100 feet from the hive and is gone only a second or two. She may be gone half a minute the next time. She generally takes these preliminary flights on the fourth day from the cell. I have known queens to mate during the fourth and fifth days, but such matings have almost invariably been unsatisfactory. It is usually on the sixth day that mating occurs. I positively know that when conditions are favorable the vast majority of queens mate on the sixth day and are ready to lay about 48 hours afterward. A great many are mated on the seventh day. There is usually something wrong if the mating act has not been enacted before the eighth day. It may be weather condition, wind, shortage of drones or the queen is not quite normal.

The statements in the preceding paragraph have to do with queens mating from small mating boxes. Strangely enough, virgins in full colonies are often very late in mating. Whereas young queens will be laying on the tenth day from the cell in mating boxes, queens are seldom laying inside of two weeks when mated in full colonies. This is a problem I have not settled to my own satisfaction.

The first flights of the queen are short, but when the final flight occurs and mating ensues the absence from the hive is prolonged from seven to twenty minutes. These are my own minimum and maximum times. I do not even imply that the time may be shorter or may be longer, or vice versa. My own observations lead me to

believe that twelve to fifteen minutes may be taken as the average time.

I came upon a defunct drone just after his widow had left him. Three live drones were buzzing close to their dead brother. Attuning my ear to the language of drones this is what I heard:

First drone: "Lucky chap, how I envy him."

Second drone: "Think so? He is dead, I am glad to be alive."

Third drone: "You will not be alive long. I heard the sisters talking last night about giving the brothers the gate. You will be gobbled up by that fat toad which sits next our hive."

First drone: "True, brother, but there are other queens. I prefer the death of this brother. So long."—Allen Latham, Norwichtown, Conn.

ALFALFA HONEY IN OHIO

When Other Sources Failed, Alfalfa Supplied Nectar for a Good Honey Crop

As long as three years ago Mr. Fuller—who was formerly associated with me—and I discovered that our bees were working on alfalfa. But it seems that we were either too busy, or, in view of what had been told us in the bee literature, were inclined to treat the fact in a rather indifferent manner at that time. However, the next season we found that, in one of our yards, alfalfa was almost the entire source of nectar since there were no sweet clover fields within reach of this yard and because of the drouth the white clover was completely dried up.

In all my beekeeping experience I never observed bees working more vigorously. They fairly tumbled over each other in their excitement. I recall that in one instance we gave a hive overflowing with bees two full-depth standard hive-bodies of foundation to draw out. Previous to this pleasant discovery we had discussed the moving of this yard rather seriously, so you can imagine our surprise when we found everything plugged with honey. This season exactly duplicated the last.

This particular variety of alfalfa is known as Grimm. It seems to be very popular with farmers in our territory who have tried it.

My observations on a two-acre test plot this season disclose that by far more nectar is secreted in the first bloom than either the second or third. However, I think that there would be but little difference in nectar secretion if the second and third blooms had as ideal weather conditions, chiefly moisture, as is usually the case with the first.

It was also my wish to test this two-acre plot for a seed yield which we did with the hearty co-operation of the owner, Mr. Frank Nelson, a former county agent and secretary of the Farm Bureau, in one of the southern states.

I can not give any positive figures on the seed harvested from the first and second cuttings (which I hope to give later), but we were more than surprised with the yield of six bushels of seed from the third cutting. The seed cleaned left four bushels and one peck of very fine quality seed. Several samples have been sent to different agricultural colleges for tests and to date no report has been given out by them.

Mr. Nelson informs me that this seed crop was much more profitable than his hay crops from this two-acre plot, and that he thinks the growing of Grimm seed in Ohio is a coming and profitable business.

I am inclined to think that many crops which have been reported in Ohio from time to time as from red clover could have been traced to alfalfa.—Lloyd C. Gardner, Delaware, Ohio.

COMMENTS ON CURRENT ITEMS

I was much interested in Editor Root's article, "Old Age Deferred." He has given us a fine example of growing old gracefully.

Did I say old? Does a man who has a healthy body think he is growing old? If so, is there not something wrong with the man? If he is the optimist that he should be, he should rise above trouble and discouragements. He will expect and look for the bright side. If he fails to see the bright side, he will polish up the dark side. Such a one will live and be cheerful a decade or two longer than the pessimist who sees only the hole in the doughnut, while his optimistic neighbor sees a whole doughnut.

The pessimist goes about with a dark lantern peering into out-of-the-way places, ever looking for meanness and things to find fault with. The optimist goes about in the bright sunlight looking for the

beautiful things, and sees more by the aid of sunshine than the pessimist can find with his dark lantern. The optimist rises in the morning with gladness in his heart, sunshine in his face, and a smile on his lips. The mere privilege of living is a priceless satisfaction to him. The optimist is in the majority, luckily, and the world is getting better.

Honey for hay fever. Surely here is something new under the sun. The editor says, "Is it possible that pollen from various fall flowers, including that from ragweed, in late-gathered honey could bring sufficient immunity to prevent hay fever?" Not only possible, in my opinion, but quite true. We use the vaccine from cowpox to render us immune from smallpox. Why should it not be true that honey from weeds that are responsible for hay fever should act in the same way? It strikes me that the Editor has started something that may be of untold value to sufferers from this distressing disease.

And here is a strange coincidence: We close our honey stand on the highway about the time fall flowers are cut off. We have quite a good trade at our town house after closing the stand. Twice recently customers have called for honey and said that they got relief from hay fever by using honey freely in their diet; in fact, they were enthusiastic, and will no doubt be honey boosters in the future. I have never had hay fever nor anything like it. As far as I can remember I have not had a cold in the lungs and very seldom a cold in the head. I use honey on grapefruit and for a sweetener on cereal and coffee for the morning meal.—J. F. Dunn, Ridgeway, Ontario.

RUGGED INDIVIDUALISM

Objections to Proposed Marketing Agreement for Beekeeping Industry

In our normal state of mind, such a thing as codes now being presented to the business world would have been as welcome as a communist president. The present proposed honey code is a fair example. It is proposed "to fix from time to time—minimum prices—based on cost of production—, to take steps to curb overproduction, each beekeeper to make reports, terms of sale shall be only 1 per cent 10 days, 30 days net." The producer may not increase holdings of bees more than 5 per cent during one year. To finance this political mass of red tape a tax on the honey produced is proposed. Fortunately, it will require signatures representing 65 per cent to make this code effective. That alone will be enough to build the code a coffin.

How anyone could even conceive that beekeepers could exist under such a tangle of red tape, is beyond me. Of course, it is a most beautiful theory, though a very old one; but it's the same rainbow. Suppose the proposed code should become effective, a price duly agreed upon, below which no honey can be sold. Then suppose the total honey crop is 100,000,000 pounds and for some reason, only 50,000,000 pounds is sold. Who is going to hold the bag of 50,000,000 pounds? The next thing to do would be to cut the production. How? Make everybody cut their colonies in half? Put half of the beekeepers out of business?

In order to enforce the code, every beekeeper would have a politician snooping around telling him what to do and what not to do. What would hurt most is, we beekeepers would have to pay for this dictatorship. This would tack another cost on the honey, make the price still higher, decrease the demand still more which in turn would require still further cuts in production, and so on ad infinitum, till all beekeepers would be breaking rocks or planting trees on government money.

There is no denying the fact that honey is selling pretty low. Being an eastern beekeeper, I am well aware what happens to the price of our comb honey when our market is flooded with western comb honey at ridiculous prices. But I have nothing against the western beekeeper, he is in the business to sell honey as I am, and not to just look at it.

Nobody can sell below cost and stay in business very long; he will go out without the help of the government. The public, as a rule has absolutely no interest in our cost of production. Why should they? They have their own worries to think about. If they can afford it, they will buy honey; if not, they won't. If we hope to sell our entire crop, it must be sold at a price people are willing to pay. Maybe somebody will think up a code that everybody must eat so much honey or go to jail.

After all, nature alone can take care of these things. It's the old reliable, "survival of the fittest." It doesn't sound as nice and sweet as the code theory, but it has existed since life was first creat-

ed, even before there were any professors or politicians to tell the Lord how to run this earth.

Why will anyone waste time and money on the impossible? The place for such time and money is Madison, Wisconsin, the Honey Institute. That's where we beekeepers can get help.

I, for one, resolve that we denounce, completely and absolutely, any attempt by anyone at any time to tell us how to run our business, to tell us how much honey we can or can not produce, and at what price we can or can not sell it. From what we're being told, maybe we will starve, but at least we'll die free Americans and not just exist like ignorant serfs. Perhaps Russia won't be such a bad place to live after all, if all these codes get going full blast.—Charles Mraz, Middlebury, Vt.

SPINSTER JANE SAYS—

A happy New Year to all beekeepers, to Gleanings in Bee Culture, its staff, and contributors.

It certainly looks brighter ahead for beekeepers with a shortage in the honey supply everywhere. Here's hoping that 1934 may bring a bumper honey crop with honey prices soaring.

I'm feeling blue, myself. Even city comforts, city bright lights, and an occasional picture such as "Tug Boat Annie," can not dispel this blueness. And I'll tell you the reason. My hives were packed away, literally filled with well-capped buckwheat honey, and now our "honey-boy" tells me it is a poor honey to winter bees on! With Andy I exclaim, "Oh, Me!"

"Honey-boy" said, "I'm surprised, Jane, that you do not study the A B C and X Y Z of Bee Culture more. You should, you know." Well, I'll take that right on the chin, and still standing. You see, this chin of mine is so square and Scottish, and spinsterish, it just can not take a knockout blow easily.

It may be Mr. Root never experimented with northern-grown buckwheat honey. There's a chance. There is a difference in other things grown in the North and in the South, so why not in buckwheat? I'll be honest, at least, and next spring I will tell you the result, even if I lose every colony. Still, "Ise worried!"

Another thing I've learned. Here I was, delighted at the prospect of a big sweet-clover crop, next year, expecting to harvest a superior type of honey, and our "honey-boy" says, "Stick to the alsike, Jane. It can not be beaten. That's just why our northern honey tastes just a little better than any other." Can you beat it?

Now what do you folk who are lovers of sweet clover say to that? Tastes differ, of course, but women generally have the best taste—in their mouth, at least. To me, sweet clover honey both smells and tastes like nothing so much as some tobacco. I refer to the smell, mostly, and to what I imagine the taste would be. Honestly, I don't smoke anything but the bees.

Does anyone agree with me? Nary a man, I'll bet. They never do agree with a woman, no matter when taken. They form the cantankerous minority, likely, as usual.

"Honey-boy" hopes one day to take over my bees and begin where I leave off, and with his greater knowledge of them, he should be something more of an authority on the subject of honey than am I, so, I'm going to concentrate on alsike. All my extra pennies will be henceforth spent on buying the best grade of alsike I can buy. I'll buy alsike, talk alsike, dream alsike, and my bees will reap the benefit in their search for nectar. I hope to have so much near at hand, that it won't be necessary for them to go far afield, to my neighbors' sweet clover fields.

And, folks, that's my one New Year resolution. Anyway, if 1934 will just bring us contentment and happiness, why worry!—Spinster Jane.

[Don't worry about that buckwheat honey, Spinster Jane. It is considered to be quite suitable for winter stores.—Editor.]

A NOTED GERMAN QUEEN BREEDER

Inventor of Queen-Rearing Apparatus and Instruments for Inseminating Queens

One of the most prominent apiarists of Germany, particularly in the science of rearing queen bees, was Wilhelm Wankler (1855-1929). He was born in 1855 at Heilbronn, Württemberg, and died in 1929, at the age of 74 years, at Sulzburg, Baden, Germany.

When Rev. Weygandt, Germany, discovered the art of transplanting larvae, it was W. Wankler who first recognized the importance of this discovery and invented the use of cell bars. Being a watchmaker

by trade he made many small tools for the use of apiarists. He made an apparatus for measuring the length of tongues of bees, a special cage for rearing, introducing, and sending queens, called the Triumph Cage, tools for transplanting larvae, queen incubator, and the artificial queen cell.

In September, 1883, at the convention of apiarists of Europe, at Frankfurt am Main, Germany, Wankler exhibited his tools for rearing queens, measuring the length of tongues, and artificial cell cups. And when he told the apiarists that he could rear queens from transplanted working larvae up to the age of three days, people laughed at him.

Mr. Frank Benton, Assistant Entomologist of the U. S. Department of Agriculture, Washington, D. C., was also present at this convention. He had exhibited some colonies of bees which he had brought from the Orient. Mr. Benton was much interested in those tools of Mr. Wankler and asked for special information in the use of them. He finally bought a complete set of these tools of Mr. Wankler.

At the convention of beekeepers at Bruchsal, Baden, in 1882, Mr. Wankler exhibited these tools and was awarded first and second prizes. At the convention of German and Austrian apiarists at Coeln am Rhein, Germany, September 7 to 9, 1880, Rev. Weygandt gave a special lecture on the grafting of larvae for rearing queen bees which was published in the magazine, "Bienenpflege," 1881, page 51. In 1881, W. Wankler made his first honey extractor for four frames which he exhibited at the agricultural exhibition at Vaihingen, Württemberg, 1881. He exhibited here also his queen-rearing appliances which contained already special cell-bars with grafted queen cells. Wankler received many prizes on account of his inventions, at Cannstatt, Württemberg, in 1881; at Bruchsal, Baden, in 1862. In 1883, he exhibited his queen incubator at Heilbronn. It was made with glass windows, so the emerging of queens could be watched, which created much interest.

At the convention of the Union of Queen Breeders at Magdeburg, Germany, in 1922, W. Wankler was made an honorary member of that organization. He was also honored at the convention at Bregenz, Tirol, in 1923.

At the convention of apiarists at Leitmeritz, Bohemia, 1927, Wankler gave an interesting lecture on his experience in the artificial fertilization of queen bees. His trials in this line dated back to 1880, and he spoke about his failures and final success. Being a watchmaker by trade he made fine instruments of silver for the artificial fertilization of queen bees, and many of these instruments were furnished

Wilhelm Wankler, German queen breeder (1855-1929).

to prominent investigators in queen rearing. He mentions in this lecture that many drones are sterile and describes how this can be ascertained. Being asked whether he considered the artificial fertilization of queens important, he answered yes, for scientific purposes in the production of new breeds, but not for practical purposes to the honey producing apiarist. His lecture appeared in print in the issue of September 1, 1927, of "Praktischer Wegweiser für Bienenzüchter," Wolfenbüttel, Germany.

W. Wankler wrote a book, "Die Konigin" (the queen), which appeared in its fourth edition (some 10,000 copies) by Theodor Fischer, Frieburg in Br., Baden, Germany. It is very interestingly written and illustrated with many pictures of his tools and appliances. Even experienced queen breeders and old apiarists will derive great benefit by reading it. Professor Dr. Ludwig Armbruster, Director of the Institute for Bee Culture of the Agricultural High School, Berlin-Dahlen, Germany, writes about W. Wankler that he lived some 30 years too early to be already now fully appreciated in his teachings in bee culture.—Otto Luhdorff, Tulare, Calif.

From North, East, West and South

SOUTHERN CALIFORNIA. — December is here with the most delightful weather one could wish so far as balmy air, sunshine and pleasant surroundings are concerned. But so much depends on the moisture as an assistance in carrying on that every day, week, or month without rain decreases our chances for a honey crop by just that much. No rain of any account has fallen since January, and you can guess that the ground is getting dry. It is a wonder that things look as well as they do.

Most of the beekeepers with whom I have talked report that their bees are in good shape for winter. Generally speaking, beekeepers are leaving a good quantity of stores feeling that it is a good investment if the bees need it, and if they do not, it will be there in the spring.

A Better Quality of Honey at Higher Prices is an Encouraging Feature of Roadside Marketing.

Honey is displayed on many of the roadside stands so plentifully seen along our California highways. There is no doubt that increased sales are brought about by the attractive displaying of honey. Especially is this true when the container is of glass with an attractive label. One thing we have noticed is, we do not see the five-pounds-for-25 cents package that did so much to cheapen honey and discourage its use by selling a poor grade. While the price has been raised, the quality is also better. If only the better grades were offered in the retail package, it is our opinion honey would be much more generally used.

What a wonderful thing it would be for beekeepers if the editorial in December Gleanings, "Honey for Hay Fever," and the article by Dr. Wilson, "Function of Honey in the Diet," could be carried to all the people through our newspapers. We would not need to hunt a market for our honey, it would come to us.

Beeswax is much more in demand at advanced prices and seems destined to go higher. While the market for honey is firm, buyers are not offering prices that attract the average beekeeper who has held his honey. Only a small per cent is still in the hands of producers. Some beekeepers always hold at least a part of their crop feeling that about tax paying time they will need money, and the price of honey seldom goes down until the new crop is in sight.—L. L. Andrews, Corona, California.

NORTHERN CALIFORNIA.—We have never had a more disappointed lot of beekeepers. The price of honey has been low. The alfalfa honey flow was cut short in many places, and the star thistle was very disappointing. Many beekeepers moved in with bees in first-class condition. The star thistle was most promising, but in many places entire fields dried up inside of two weeks, thus cutting down the production. Now that the entire crop is in, the beekeepers are, as usual, looking hopefully to the season of 1934.

Unless it is enforced, a code of fair competition is only a scrap of paper. California wants it to be more. It may be obeyed by a few conscientious or timorous members of the industry but without enforcement it will soon be flagrantly violated. The government recognizes this fact and is going to enforce these codes, unless industry does. The advantages of self-enforcement are: (1) the industry enforcement machinery can be made an agency for education as well as punishment; (2) it will prevent outside interference; (3) it will be well disposed and friendly; (4) it will not be arbitrary or bureaucratic. Whether we assume the responsibility of self-enforcement or not, we should study both sides carefully. Anyway, the code gives us a great opportunity for study and we should do that studying before it is too late.

Messrs. Sechrist and Todd of the Pacific Coast Bee Culture Field Laboratory at Davis and Prof. Adams of the Giannini Foundation of the University of California at Berkeley, have finished their survey among the beekeepers of the state for material to compute the cost of honey production. The material is being prepared for the printer and it is only a question of a short time till beekeepers will have all the requirements for completing their code. This is not all—it should aid beekeepers greatly in producing the honey crops of the future.

With the assistance we are receiving from the University, the state and the United States, and the fact that prices for honey are considerably improved, we should go forward with brighter hopes for a crop in 1934.—Cary W. Hartman, Oakland, California.

ARIZONA.—We have just had our first cold weather here during the past few days. On November 28 there were general rains over the valleys with snow in the mountains. As evidence of warm weather, rattlesnakes were out crawling around until the last week of November. When we have a late, warm fall, we usually expect a late cold spring which cuts down honey crops considerably.

Arizona Honey Goes a Long Way to Market—Some to Italy.

Several small lots of honey have moved to market during the past month, some of it being exported to Italy. Local demand for honey is holding up well, and now that hundreds of men are being put to work the demand should increase.

I just noticed the government has specified only American cane and beet sugar can be used in the manufacture of alcohol. Why can't dark honey be used also?

Many are wondering just what effect the return of liquor will have on business. The money spent for drink means that much less will be spent for other things. Some people prefer their drink to the necessities of life. Will the highways be safe places to travel in pursuit of our business? This is a problem we shall all have to look out for in the future.—Leslie Wedgworth, Oracle, Arizona.

SOUTH DAKOTA.—The inception of December brought a bit of rain; to be sure, it was received with greetings. One can fully appreciate even a small token of Nature's benevolence since there has been scarcely a trace of moisture for 75 days, the interval distinguished by dust storms, one of which turned high noon into a swirling, blackened uproar which for about three hours completely obscured the sun. A bit of rain gives a mellowing touch to the character of earth and mortals alike and suggests a harmony in accord with the holiday season.

Along with the varying reports of colony yields, ranging from virtually nothing in portions of the north to well over a 100-pound average for a 500-colony outfit in the southeastern corner, one hears of some excellent results with package bees. One beekeeper asserts his packages averaged as high production as his medium-strength wintered colonies. As a result of such, and a stronger honey market, several are already talking of package bees for the coming season.

Many Experiments with Various Types of Top Entrances for Outdoor Wintering Are Now in Progress.

With the exception of a few yards, bees have been cellared or packed for some time. In line with wintering considerable interest is apparent in top entrances. One man who used them last winter, put on a larger number this fall. I know of two different types of these entrances with two or three variations of each type being used by different beekeepers. With such experimentation taking place something approaching perfection and a standard type should result if the top entrance principle proves successful. At any rate, our expectations are high.

Foulbrood seems to be pretty well under control in the state, eradication being mostly a matter of familiarity with the disease and its treatment. The method of handling by one outfit consists of placing all infected colonies in a separate, isolated yard as soon as discovered. They are allowed to produce whatever honey they will and at extracting time are dispatched with Cyanogas. The best of the honey is extracted, all combs melted down, frames boiled and hive bodies scorched out after spraying with a mixture of kerosene and gasoline. The method simplifies a disagreeable task in that it is all done at one time at the end of the season.

And so I'll be wishing you the best in this New Year.—J. F. Norgren, Junius, South Dakota.

WYOMING.—On Thanksgiving Day we drove up into the mountains where we could cook our dinner over a campfire and enjoy some skating on the lakes. We camped at an elevation of 10,400 feet above sea level. There was no snow and the lakes were only partially covered with

ice. However, there was enough ice so that we enjoyed some fine skating.

Lack of Snow in the Mountains Makes Outlook for Water for Irrigation Very Poor.

The streams are all low and in the prairie country many springs have dried up. The situation for the state as a whole is summed up by the U. S. Weather Bureau as follows: "Water is very scarce with many streams dry. There was no snow whatever in the Medicine Bow, Sierra Madre, and Wind River mountains and the water outlook for irrigation purposes is very poor."

Our experimental colonies were placed in the cellars November 25. Despite the warm weather the cellars have remained quite cold. We use electric thermometers to determine temperatures at various points throughout the cellars and in the scale colonies. Temperatures can thus be determined without opening the cellars. The cellar doors are opened but once a week, when colony weights are taken and charts are changed on the temperature and humidity recording devices. Disturbance of colonies in the cellars is thus cut to a minimum.

Our local honey market is very badly disorganized at the present time. One grocer was retailing five-pound pails at 35 cents, and that is considerably below our wholesale price. We hope the situation will improve and that the price levels will become more uniform.—C. H. Gilbert, Laramie, Wyoming.

TEXAS.—The weather for November was a continuation of the increasing dry period which began in September. Less than one-half inch of water fell during the month, and the temperature was slightly above normal. This has resulted in a condition unfavorable for bees.

The condition of honey plants is below the normal for a 10-year period, but is far above the lowest limit reached in that same time. Annual honey plants, such as horsemint, made a noble attempt towards a late fall growth but most of the seedlings are now dead. The condition, however, is not alarming as it is the opinion of long-time beekeepers that a dry fall and winter means a high quality honey crop and generally a normal one. This proved true the fall and winter of 1932-33. Mesquite which gave a good honey flow over much of Texas this year is in good shape and according to the opinion of the beemen the chances are yet good for another mesquite flow in 1934.

There has been considerable activity during the past fall among the larger beekeepers. Many have purchased a considerable number of colonies and have established new outyards. The bees which once were so abundant in the country around Carrizo Springs and Uvalde have been largely moved east and north into the cotton country. This is the result of the cutting out of large areas of native shrubbery which formerly furnished the early spring honey crop of Uvalde district.

Due to the low price of honey and the low yields of recent years, a number of beekeepers have started in the manufacturing business. In San Antonio there are three men who, in the last year, have installed machinery for the making of certain articles pertaining to beekeeping. It remains to be seen if these local manufacturers can obtain sufficient patronage to pay the outlay for machinery.—H. B. Parks, San Antonio, Texas.

KANSAS.—The total deficiency of soil moisture covering the past three years has been about 20 inches. These conditions have prevailed especially through the eastern half of Kansas except in the southeast corner of the state. The soil deficiency condition will undoubtedly affect the more shallow-rooted honey plants, such as white clover. There also will be a pronounced effect upon sweet clover, except where growing on creek- or river-bottom land. This also is true to a certain extent with alfalfa which is grown in the non-irrigated areas of the state.

Stocks of Honey in Important Producing Areas Are Already Low and Prices Have Held Well.

Demand for honey early in the winter was good and held up until the middle of November. The demand dropped off to a certain extent at the approach of the Thanksgiving season, since probably store stocks had been well supplied and had not been reduced sufficiently to cause re-orders.

In the south-central region, where a

crop failure prevailed, beekeepers have bought honey to supply their trade. In other regions of the state, the demand has been to supply the southern and western part of the state which ordinarily is supplied from Colorado. At the present time there is very little of either comb honey or extracted honey available in the larger honey-producing areas of this state. Honey has sold at what is considered a good price.

It is planned to hold a beekeepers' program on February 7 and 8, 1934, during Farm and Home Week at the Kansas State College, Manhattan, Kansas. The tentative program is made out and covers various subjects which are of primary interest to beekeepers in the present distressing times. This program will cover phases of production and marketing, and a discussion of various N. R. A. codes as they affect beekeepers.—R. L. Parker, Manhattan, Kansas.

IOWA.—The program during National Honey Week furnished by the Home Economics Department of Iowa State College was developed around the honey recipe contest which has been conducted during the past year. All the recipes sent in were made up and tested by the staff and the awards were made on the basis of score card judging. The awards were announced by Dr. P. Mabel Nelson over WOI and the recipes have been made available in printed form and are sent on request.

Many Who Did Well Last Season Are Planning to Increase Their Number of Colonies for Next Season.

There seems to be a general desire on the part of a good many to increase their holding of the bees during the coming year. It is true that the season of 1933 was especially favorable to Iowa producers, for, in spite of the apparently unfavorable weather conditions, a large crop was enjoyed; it was more important because of the general low average throughout the United States. There is every reason to believe that the future holds well for an increased production of honey for those who enter an enlarged program knowing the difficulties and possibilities. Surely the demand has been materially increased during the past five years. The public as a whole is becoming quite generally honey conscious and there is a desire on the part of more people to use honey in more ways than ever before.

Weather conditions have been favorable in that no unusual temperatures have been experienced. Bees went into winter quarters in good condition. The colonies were well supplied with young bees and with a liberal amount of stores. The condition at the present time is one of moisture. There have been no fall rains or snow and in some instances clovers have suffered as a result of this drouth. The prospects for another year will depend upon the available moisture throughout the remainder of the winter and spring.

Beekeepers everywhere will be interested in the possible effect of the corn-hog program as it may reduce the acreage of corn with the possibility of increasing the acreage of sweet clover which is a means of land improvement. This is in reality the aim of the government in bringing about the so-called reduction program.—F. B. Paddock, Ames, Iowa.

ILLINOIS.—From all appearances it seems that we are going to have a normal winter for the bees. So far we have had only about a week or two of cold weather with a little snow. Sudden changes from warm to cold are much worse than steady cold weather. Up to now this has been an ideal winter. We hope that it will remain so.

We had a very interesting meeting at Springfield, November 15-16. A number of important topics were discussed at the meeting and there was a large attendance. The people who attend this meeting are usually commercial beekeepers and the best of the state. The banquet held at St. Nicholas Hotel in the evening was the largest so far held. We had a number of prominent guests present, among them Walter W. McLaughlin, Director, and J. H. Lloyd, Assistant Director of the Department of Agriculture.

Our wonderful fair exhibit and the large attendance at our beekeepers' convention has brought the beekeeping industry up in the estimation of our Governor, Henry Horner, and the Department of Agriculture.

The past year we didn't have much inspection but things are getting in shape now so that we will have a good program worked out for the coming season. This will be of interest to Illinois beekeepers.

The honey market thus far has been fairly good. The retail sales have advanced a little, but some beekeepers are holding out for a little better price from the wholesale trader. Bakers throughout the state are interested in using honey, thus creating a greater demand for the dark honey. Beekeepers can not ask too high a price for the honey or the bakers will use syrup and leave the honey on the shelf.—C. L. Duax, Chicago, Illinois.

GEORGIA.—The summer and fall honey flows were very disappointing throughout the state. Showers were needed in order that the Mexican clover and velvet beans could yield. Nevertheless, the bees built up and stored enough honey for winter.

Cotton is not extensively grown any more, besides the boll weevil begins its destruction about the time it is ready for the bees. The field peas that were once planted extensively behind grain crops are no more, since the farmers are not raising grain. These two important honey plants have passed out. Velvet beans are still planted in sufficient quantities throughout the state to produce a surplus provided they have sufficient moisture. Nectar from this source is hard to obtain since it collects in a well protected cell at the base of the blossoms. Strange as it may seem, the bees from some colonies never discover it, or else do not put forth the effort to obtain it, which can only be done by unfolding the blossom down to the cell, then puncturing. As a rule, a load of nectar is obtained from each blossom.

The most popular containers here are the 5-lb. pails, retailing at about 50 cents; 2½-pound cans, 30c; 16-ounce jars, 20 cents; and 4-ounce jars, 10c. The 32-gallon barrels are the most popular wholesale containers.

The marketing of honey has altogether changed during recent years. Less than 10 per cent of the crop is shipped by rail. Store-door or warehouse delivery by truck is the method now, collecting on delivery. Large honey buyers of yesterday are not known today, for chain stores have come in, taking the place of wholesale and individual stores and doing their buying at unit points. The beekeepers visit these points offering their crops at certain prices for store-door or warehouse deliveries. This is where competition is very keen and strongly felt, for the master buyers are already wise, having in their files quotations and samples from all large producers. Therefore, they know how to handle the beekeepers. As a rule, they buy from the cheapest man, quality not being a matter of much consideration, consequently the beekeepers have to be salesmen as well as good bee masters, graders, and packers of honey.—J. J. Wilder, Waycross, Ga.

NORTH CAROLINA.—The honey crop in this state has about all been taken from the bees, and the apiaries generally are comfortably settled for winter with plenty of bees and stores. The season was about 80 per cent normal for honey production, and the bulk of the crop has left the hands of the producers. The honey flow was irregular through the state. In some of the best producing sections the yield was below normal while in other parts more than the average was obtained.

Reports from Sideline Beekeepers Throughout the State Make a Good Showing for the Season.

Reports and records from farmers and others who keep bees as a side line show that 3122 colonies produced 209,164 pounds of honey, an average of about 67 pounds per colony. The average value placed on the honey was 10½ cents a pound, or about $7.00 per colony. This does not include reports from extensive beekeepers who devote most of their time to the occupation and on the average are much more skillful in their beekeeping practice. It does represent sideline beekeeping in all sections of the state, with most of the reports from farmers, many of whom have assisted in running demonstration apiaries for better beekeeping in their communities. The average production was far below that of the most skillful, some of whom in good localities received yields of more than 120 pounds per colony. The bees proved to be the most valuable side line for most of them.

The North Carolina State Beekeepers' Association is scheduled to meet at the Chamber of Commerce in Charlotte on Thursday, January 25. Professor F. B. Meacham, State College Station, Raleigh, N. C., is secretary, and will look after the program and other arrangements to make the meeting interesting and profit-

able. All beekeepers, whether members or not, are invited to attend and assist in solving many problems requiring united effort.—C. L. Sams, Raleigh, N. C.

ALABAMA.—Very little feeding was necessary for winter stores in the Black Belt of Alabama. Those that did need feeding are now being fed so that they all will have ample stores for winter. If conditions are at all favorable in the spring, no more feeding will be necessary before the 1934 honey flow.

Marketing Agreement is Expected to Bring an End to Chaotic Conditions in Package and Queen Industry.

Much thought is being given to the meeting of the Southern Conference in New Orleans, December 11 and 12. This meeting is especially interesting this season as the final hearing for the Marketing Agreement for Package Bees and Queens will be held at that time. Shippers are hoping that this agreement will bring to an end the chaotic conditions that have prevailed in this branch of the industry for several years.

A lot of comment is being heard on the prices asked in this code, many buyers claiming that they are too high. Most of these are jumping at conclusions, basing their criticism on the price of packages and honey this year. They do not take into consideration that the prices that prevailed this season were driven to unheard of low levels by wild price cutting and did not cover the cost of production. Add to this the fact that production costs have already increased and will rise still further before the shipping season begins and it can be readily seen that the prices asked will not allow the shippers more than a reasonable margin of profit. By the time packages are shipped in the spring most beekeepers will be able to see that they can still buy packages and produce honey at a profit. Plans for the 1934 crop must be based on honey prices for the 1934 crop and not for 1933.

It is the purpose of the present administration to advance prices of agricultural commodities to a level of 1920 to 1930. By reading the advertisements over this period it can be readily seen that the package shippers are not asking for this great an increase in price.—J. M. Cutts, Montgomery, Alabama.

FLORIDA.—Colonies are in fine condition here in the central part of the state. They are boiling over with bees and have ample stores where caution was exercised in late extracting. The summer honey flow was spotted but sufficient on all locations to insure heavy brood rearing. Some apiaries had ample stores for their own need and enough to supply those in the less fortunate locations.

The late summer requeening is given credit for the strong condition of colonies. It is necessary to keep close tab on queens especially where the laying period runs almost the entire year. In the home yard today, December 1, there is brood in all stages in most colonies. This wears the queens out fast. Requeening is necessary every year in some locations, but in others the queens are just as good the second year as the first.

Colonies in Tupelo Region Must be Strong Early in Order to Secure Good Yields, for the Honey Flow is Short.

Bees in northwest Florida, in the tupelo section, are very quiet during December, as there are few if any flowers out during the month. In January alder and maple will produce pollen, and maple some nectar, which will help stimulate brood rearing. Colonies are not as strong there as in central Florida, but those which have sufficient stores and young queens will build up fast and have an army of workers for the tupelo honey flow. If either is wanting, we can not expect a surplus from this source as it is a quick honey flow.

Honey is moving much better for the past 30 days, but this is to be expected as the tourist season is on. There seems to be a general loosening up all the way around. There is no increase yet in retail prices, 50 cents for the 5-lb. pail and 80 cents for the 10-pound size seems to be about the average.

The next four months will see the destruction of thousands of acres of bee pasture as well as the wild life, and the impoverishing of the soil, by woods fires. One can see evidence of it this early—acre after acre stripped of all small trees and vegetation. We would have one of the best gallberry states in the South if the burning would only stop. It would take only a few years to restock it as it is a hardy plant. Year after year it comes back after being killed by fires.—N. Forehand, DeLand, Florida.

MICHIGAN.—The Michigan Beekeepers' Association has just concluded its sixty-fourth meeting at Grand Rapids. After discussing the proposed Bee Products Marketing Agreement for most of the two-day meeting, the association voted to approve the proposed agreement with the exception of the clause limiting increase to 5 per cent. However, there was no objection to the clause providing that the National Board can limit increase when it becomes necessary. District meetings will be held shortly at Saginaw and Adrian, together with several county meetings, to give beekeepers full opportunity to learn all about the agreement.

Stocks of Honey Are Greatly Reduced Over Those of a Year Ago.

Demand for honey has been slightly quieter during the past few weeks, but stocks are low. Probably there is not more than one-half as much honey in Michigan now as there was a year ago today. Some buyers are going to wake up, rub their eyes, and wonder where the honey has vanished to, before spring.

Fall rains filled the low spots and more than the usual amount of snow boosts the hopes for a crop of clover honey next season. During the hunting season we noticed a good showing of both volunteer and seeded clover.

Several parties of beekeepers went into the north woods again this year to hunt the wary buck. Our party of twelve killed a 60-pound can of honey—and twelve bucks, while in camp.

The Foods and Standards Division has accomplished this much in its skirmish with the firm which was packing adulterated honey—the firm is now packing pure honey, offers $100.00 reward for proof of impurity, and has raised its prices, but no action has been taken as yet. If the reasons given are true, then Detroit is to be infamous for other things than banking. But the closing chapter of the case is not yet written.

Provision was made to accommodate future requests for honey to be used for demonstrations and advertising purposes. All in all, the Grand Rapids meeting showed a positive spirit of co-operation in working out the problems we face. When such a large group goes after anything in a deliberate fashion, much good must follow.—R. H. Kelty, East Lansing, Mich.

SOUTHERN INDIANA.—Bees in this locality are in excellent condition for winter—plenty of stores and young bees. We had freezing weather the latter part of November. Even such hardy plants as turnips were killed. Therefore, I was quite a little surprised to see the bees bringing in a little pollen yesterday, December 4. Some pollen was red, some white, and some yellow. The bees got it from chrysanthemums and late blooming dandelions.

While the sale of honey is not what it used to be, yet, compared with other foods, it is more than holding its own.

Fruit is Greatly Improved in Flavor by Using Honey for Sweetening Instead of Sugar.

This past season we canned peaches with honey and all pronounce them the best we ever ate. For success in canning one must use white honey as the dark honeys seem to scorch and lose flavor. Then the fruit must be canned by the cold-pack method and sterilized just enough to make it keep. We use a pressure canner but the common boiler method will do. One must work out his own system of timing as the general rules do not seem to fit every case. Our peaches had no cooked taste but tasted more like real ripe sweet peaches.

All fruit may be put up with honey and the flavor much improved. One's taste is merely a matter of habit. Since we have been using honey on berries, how utterly flat and tasteless is common sugar when used. What is better than real ripe red raspberries covered with thick cream and honey! Strawberry- and raspberry-jam may be made by using honey and curing in the sun. In this way the fruit or honey is not injured as in cooking and the preserves or jam is most delicious.

In summer we nearly live on ice cream made of cream and honey. The expense is about one-fourth of boughten cream, and it is much better. We buy lemons by the peck in hot weather. Lemonade with just enough honey to take off the extreme sour taste is delicious and wholesome. If beekeepers would practice using honey and preach its use, it would be a great help. All who get literature from the Honey Institute may use those receipts in making more delicious things to eat; and one can eat things sweetened with honey with a clear conscience, knowing it will not hurt him.—Jay Smith, Vincennes, Indiana.

ONTARIO.—November here in Ontario was much colder than for a number of years, the thermometer going to zero or lower at least three different times. The first 10 days of December have also been colder than usual, and it begins to look as though we are going to have what some call an old-fashioned winter. During the last two winters, the weather has been unusually mild and snowfall light. Snow has been on the ground for much of the time since mid-November. At present we have about five inches of "the beautiful."

In most cases bees were prepared for winter earlier than usual this fall as the season was early and the crop of fall honey was removed 10 days earlier than last year. Weather conditions have been bad since early November to do this work.

Honey is moving in a normal way, and recently a short survey made in Toronto confirms what I said in a late issue of this journal about supplies of honey on hand being very light. Aside from what is in the hands of one dealer and producer, I doubt if there is a single car of honey left in the hands of any producer. While at our annual convention held in Toronto during the last week of November, it was hard to find anyone who had any quantity to speak of among those who produce less than car lots. Wholesalers in Toronto are asking from the trade about two cents a pound more than they did six weeks ago; that is a good index as to present conditions.

Producers Are Greatly Interested in the Question of Compulsory Grading of All Honey for Export Trade.

The convention referred to was well attended and interest was keen during all the sessions. Discussions at these annual meetings generally center around questions that are of live interest at the time due to conditions peculiar to the moment. This year was no exception and it was no surprise to see the interest taken in the question of compulsory grading of honey particularly for that intended for export. Export trade has been heavy this year and returns in most cases far above what beekeepers have been receiving during the past few years. Whether this will continue for another season or more is a moot question, but for the time being the British market appears to be the Mecca of Ontario beekeepers, hence the interest in grading regulations.

Much discussion was given to the question, and I believe that a committee was appointed to go into the matter in more detail. Opinion in general seems to favor compulsory grading, but there are a lot of things to be considered carefully before an effort is made to compel beekeepers to try to do something that may be impossible for them to fulfill in its entirety.

Another feature that the ordinary man objects to these days is the creating of more organizations that mean the hiring of more civil servants. Canada enjoys the rather doubtful distinction of being, next to Belgium, the most governed people in the whole world. By this I mean that we have more civil servants per capita than any other nation. Of course, this means more taxation, and just at present that item is the most-talked-of subject in the Dominion. Hence the average man's objection to creating more departments that mean more civil servants and more taxation.

Another subject that received much discussion was the matter of failing queens sent in packages. A few years ago, I was almost alone in claiming that something was wrong somewhere, and, in a few cases at least, I was told that the trouble was caused by poor handling after the bees arrived.

Well, that is past history. Anyone who listened to this question being discussed a week ago in Toronto would have come to the conclusion that everybody purchasing packages was having the same results. At least two commercial beekeepers state that they were positive that they did not have a single queen go into winter quarters last fall that was with the packages on arrival last spring. What is worse from the producers' standpoint, in many cases at least, 50 per cent failed inside of a few days or few weeks at the most after being placed in the hives. Various reasons were assigned but space will not permit me to mention them at this time. Later I may give at least a few of these reasons that appear to have merit.

If I am correct, only one shipper of packages was present. He agreed in general with the reports given by beekeepers, but felt unable to advance any reason that he felt sure would explain why so many queens failed so soon after arrival in Ontario. Of course other provinces report similar conditions so this trouble is not a local one.—J. L. Byer, Markham, Ontario.

Heads of Grain from Different Fields

Tables Relating to Density

In answer to the question of F. C. Mann in December Gleanings, the table that he asks for is printed in both of the Handbooks for Sugar Chemists, by G. L. Spencer. The table gives Brix, Baume, pounds per gallon, and pounds per cubic foot on the same line. The books also have specific gravity tables and temperature correction tables. The Brix hydrometers are more accurately made than the Baume, but more fragile. I have handled hundreds of both kinds in sugar syrups.—A. N. Clark, Charlotte, Michigan.

Honey for Labeling Tin

For some time now, as a matter of experiment, we have been using off grade honey to paste labels on honey containers. It seems to work very well, for we have never had a complaint. Honey has been used exclusively on all our labels during the past four years. This is a very dry climate and our honey is very thick and heavy. Perhaps these factors account for the success of the method. I imagine in more humid regions the honey would absorb moisture and the labels gradually loosen. We have made several tests, and the only time we experienced trouble was when live steam was circulated about the cans for several hours. Then all the labels dropped off. I am wondering if any beekeepers located in more humid regions have used honey for this purpose.—C. H. Gilbert, Laramie, Wyoming.

Profitable Small-Scale Beekeeping

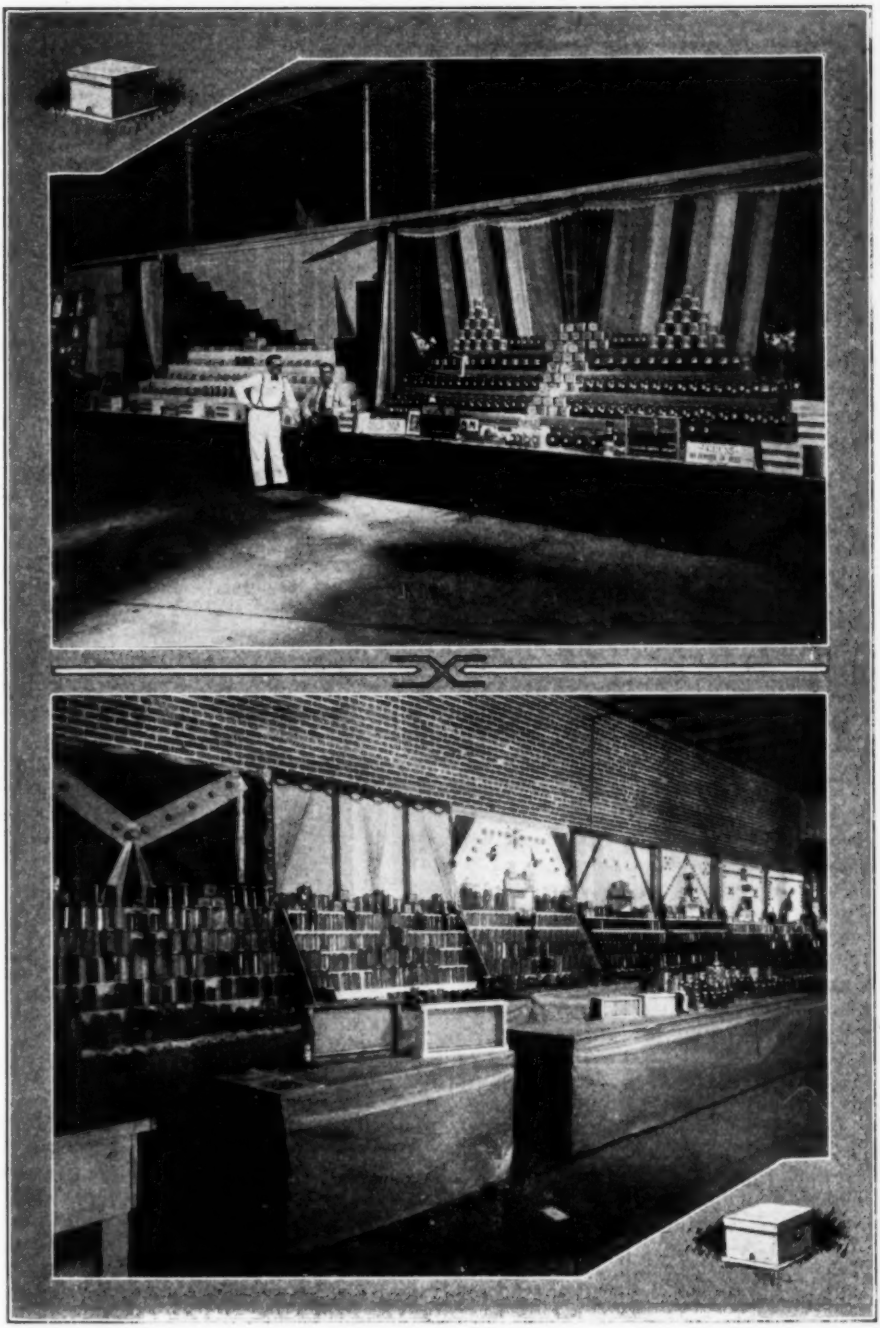
I have been a small beekeeper for several years and find that a dozen colonies help out materially on the grocery bill. In south central Mississippi we have two main honey flows—sourwood and cotton. Last year I practiced swarm control and produced 75 pounds of comb honey on my best colony. I have a ready market for all I can produce. Extracted honey does not sell so well in 10-pound pails, though I sold some for 75 cents each. We have no winter problems here except feed, but all honey must be removed before bitterweed bloom; otherwise it becomes stained yellow and bitter. Here we need a dry spring and summer to produce a bumper crop. We are beginning to plant hairy vetch for hay. Bees work on it, but whether it will become valuable here as a honey crop remains to be seen.—G. E. Walker, Mendenhall, Mississippi.

Those Golden Caucasians

In the December Country Home is an article by Frank C. Cross about the life of Herman Rauchfuss, Denver, Colorado. It is a well written interview, but one has to laugh when he describes the air in the apiary as filled with hundreds of golden projectiles flashing around them. In another place he tells about the velvety yellow bodies swarming over the combs he was shown. He also states (which we know to be true) that these bees were Caucasians. If Herman happens to ship some of his bees to some one who gets interested from that article, he will have some time making his customer believe that the black and gray bees he gets are the same as the golden ones he keeps in his yards, for didn't Cross see them there. People who write for public information should know their onions or keep still.—Harold I. Perrin, Sargent, Nebraska.

Doctor Learns Value of Honey

Last summer the demand for honey has been the heaviest in our experience. Prices generally have increased and demand continues good. Whether this is due to the short crop or to general enlightening of people as to the healthful properties of honey is a question. There is much more inquiry for large lots than last year, and due to a poor fruit crop there is good demand locally. Our most prominent doctor was very difficult to convert to the excellent qualities of honey but at last has been won over and is prescribing it liberally. One patient, a serious goiter case awaiting operation, he directed to use all the honey she could consume. A diabetic should never use honey, however, except in compliance with his physician's orders. Honey as a sweetening agency in milk for babies is gaining steadily, despite the advertising over local radio stations, sponsored by the corn sugar faction.—Benj. Nielsen, Aurora, Nebraska.



HONEY EXHIBITS AT TWO STATE FAIRS

Upper: Exhibit of J. Harley Walker, Galveston, Indiana, at the Indiana State Fair at Indianapolis. This single exhibit occupied 40 feet of space and took eight ribbons on eleven entries. Lower: Bee and honey show at the Tulsa, Oklahoma, State Fair. There were nineteen exhibitors in amber extracted honey, and in most of the classes there were at least fifteen. There were nine entries for three-banded Italian bees and ten for golden bees.

Bees, Men and Things

(You may find it here)

"I wish that all queen breeders in the United States would set the price for queens two ways, by air mail and by railway mail."—J. Vincent, Jackson County, Oregon.

"That sermon by the Jay on Thanksgiving in the November issue was great. I wish you would have him give us a sermon quite often."—A. J. Milem, Lewis County, Wash.

"Times are getting worse every day. People are not able to buy honey. Chickens are the lowest I have ever seen them. Farmers can not pay their taxes."—Geo. B. Howe, Jefferson County, N. Y.

"I find the best results from leaving my bees with a full super of honey as their winter stores. Feeding sugar syrup involves an expense and also more labor."—Jos. D. Brennan, Orleans County, La.

"Most of the honey being sold is moving in ton lots to candymakers and bottlers of pop, orangeade, ginger ale, and other soft drinks. The sales in 5-lb. pails in stores is a joke."—Francis Jager, Hennepin County, Minn.

"San Francisco is not the best place in the world to keep bees, but it is one of the best to grow dahlias successfully. I find I can grow better dahlia seed by having my eight colonies of bees in my three dahlia gardens."—Charles F. Lengeman, San Francisco County, Calif.

"Our honey sales have been very disappointing the past five weeks. We are hoping that the thousands of dollars being disbursed to the CWA workers each week will be reflected in better prices and much better movement of honey within a short time."—R. D. Hiatt, Franklin County, Ohio.

"In November my bees were still doing well. They stored about 32 pounds every 15 days. They had not started preparations for winter at all, the brood-chamber was filled full of brood. I have only 11 colonies and keep them for pleasure and pastime."—J. L. McCall, Martin County, Florida.

"We had the government film, 'The Realm of the Honeybee,' during the week of October 20. It was shown seven times before a total audience of 578. These showings included three schools and one for the general public at the Y. M. C. A. The film created considerable interest, especially among schools. In fact, we had additional requests after our schedule was completed and it will likely be necessary to secure the film again for another week."—C. L. Wright, Erie County, Pa.

"Bees are in good condition and weather conditions are normal here. Some Idaho comb honey of very fine quality wrapped in cellophane is being shipped in at 13 cents. The movement is down some as compared with 60 days ago. Prices are also off a little. The demand for large lots of honey is poor."—W. L. Cox, Grays Harbor County, Washington.

"I was much interested in the article in the October issue of Gleanings in Bee Culture on observation hives. I had thought of putting one in our library and school for some time. The 'Notes on Bees' as presented in that article should be printed in large type so they could be framed and hung near the hive."—Harold I. Perrin, Custer County, Nebraska.

"We have a better stand of clover than we have had for years. We have snow enough to protect the fields. The quality of winter stores is not quite what it should be. The demand for honey has fallen off more than one-half during the past two years, as a result of the lack of buying power on the part of the consuming public."—O. B. Griffin, Aroostock County, Maine.

"Hives are unusually heavy from aster throughout most of Indiana. In some localities, the fall honey flow was all the bees got, but from reports of the inspectors and my own observations, I think that practically all hives are jammed full of fall honey. This was a lucky thing since we did not have to worry about feeding. However, some who neglected to give needed room may have a honey-bound brood-nest, and only old bees for winter. This was more likely to occur where single hive bodies were used and supers had all been removed. Quite a few were caught on this as beekeepers were blue and failed to note the fall pastures. More and more I am willing to take a chance on aster honey for winter stores rather than depend on feeding sugar or hoping the bees will have enough of the light honey of better quality. I may change my mind if we have one of those long-continued Hoosier winters with only a few flight days for the bees."—James Starkey, Marion County, Indiana.

Just News

Editors

Mr. C. L. Duax, 3414 South Western Avenue, Chicago, Illinois, has recently been appointed Chief Inspector of Apiaries for the state of Illinois.

A beekeeping short course will be offered by the University of Illinois at Champaign-Urbana, Illinois, on January 16 to 18, in connection with the annual Farm and Home Week of the Illinois College of Agriculture.

The Manitoba Agricultural College, Winnipeg, Manitoba, again offers a short course in beekeeping, January 15 to 26. A. V. Mitchener, Professor of Entomology, and L. T. Floyd, Provincial Apiarist, are the instructors.

Purdue University, Lafayette, Indiana, is offering a short course in beekeeping, January 9 to 11 inclusive. Full particulars may be had by writing to Prof. J. J. Davis, Department of Entomology, Purdue University, Lafayette, Indiana.

The Wisconsin Beekeepers' Association affiliated with the Wisconsin Horticultural Society at the recent annual meeting of these societies. Arrangements have been made to publish Wisconsin Beekeeping, the official organ of the Wisconsin Beekeepers' Association, as a supplement to Wisconsin Horticulture.

The annual meeting of the Empire State Honey Producers' Association will be held at the Mizpah Hotel, Syracuse, N. Y., Friday and Saturday, January 19 and 20. Among the many interesting features of this meeting will be a full discussion of the Proposed Bee Products Marketing Agreement under the Agricultural Adjustment Act.

In order to provide an opportunity for beekeepers in the heavy honey-producing areas of Michigan to study the proposed Marketing Agreement, district meetings will be held at Adrian, on January 10, Flint, January 11, and Saginaw, January 12. The provisions of the proposed agreement will be thoroughly discussed with the assistance of Prof. Kelty and Prof. Kremer.

The Ohio Beekeepers' Association has scheduled its annual winter meeting January 31 and February 1, in conjunction with the Farmers' Week program at the Ohio State University. The two-day program covers a variety of important beekeeping subjects on which twelve different speakers will participate. Every one interested is extended a cordial invitation to attend the meetings.

The New Jersey Beekeepers' Association will hold its annual convention in Moose Hall, Trenton, N. J., January 25. Mr. Allen Latham of Connecticut will be the principle speaker. "The Role of Cellophane in Marketing Honey," will be discussed by a representative of the DuPont Company. On January 26, at 10:45 a. m., Miss Francis will discuss the uses of honey at a meeting of the Rural Women at the Y. W. C. A. hall.

Following is a list of additional dealers who have agreed to act as receivers of honey donated to the American Honey Institute since the list was published on page 442 of the July, 1933, issue of this journal: Robert A. Stauble, Stauble Bros. Apiaries, R. F. D. No. 4, Canton, N. Y.; V. G. Howard, Howard's Honey House, 4152 South Howell Avenue, Milwaukee, Wis; A. G. Gill, the A. I. Root Co. of Chicago, 224 West Huron St., Chicago, Ill.

Farmers' Bulletin No. 1713, U. S. Department of Agriculture, entitled "The Treatment of American Foulbrood," supersedes Farmers' Bulletin 1084, entitled "Control of American Foulbrood." The descriptions and illustrations in this bulletin should enable any beekeeper to detect the presence of this disease, and brief directions are given for treatment. It is for sale by the Superintendent of Documents, Washington, D. C., price 5 cents in coin, not stamps.

An extensive honey exhibit is being planned for the annual convention of the American Honey Producers' League and the American Honey Institute at Minneapolis, Minnesota, February 19, 20 and 21. The Nicollet Hotel is turning over to the convention for exhibit purposes its beautiful Francis I room connecting with the large convention hall. Those who expect to send exhibit material should write to Dr. M. C. Tanquary, University Farm, St. Paul, Minnesota, not later than January 15, stating what they have and the amount of space required, so that proper arrangements may be made.

Gleaned by Asking

Geo. S. Demuth

Preparing Ground for Sweet Clover

Question.—Can I secure a stand of sweet clover by seeding during the winter on land having a weed sod without discing or harrowing? Can Hubam be seeded along roads and on waste lands like the biennial? Will it re-seed itself? —Kenneth Francisco, Ohio.

Answer.—It would be quite difficult to secure a stand on sod without plowing or discing. The seed would have a poor chance to get down into the soil and any young plants which did manage to get a start would face the danger of being choked out by the sod. Hubam (annual white-blossomed sweet clover) requires practically the same cultural methods as the biennial variety. This can be seeded along roadsides if the road has been recently graded, but if there is a heavy sod already established, the result would be disappointing. It would require a large amount of seed to make a showing since only a small portion of seed would be able to grow in sod. Hubam will re-seed itself after once being established.

Spanish Needle as a Honey Plant

Question.—Do bees gather nectar and pollen from the Spanish needle?—Leon A. Postlewait, Illinois.

Answer.—Yes. Especially the species which grow in swamps and along river bottoms. It is an important honey plant, in some places supplying sufficient nectar for a 50-pound or more average per colony of golden-colored honey. Other species of Spanish needle, especially those growing on higher land, are not important as sources of surplus honey.

Beeswax Floor Polish

Question.—Can you give me a formula for making floor polish of beeswax?—H. F. Riker, Iowa.

Answer.—Melt the beeswax, being careful not to boil it. When it is all melted, take from the fire and slowly stir in about an equal amount of turpentine. This makes a paste of about the right consisteney for polishing floors.

Cleaning and Sterilizing Queen Excluders

Question.—Will you suggest some practical method of sterilizing queen excluders that have been on hives which contained American foulbrood? Do you know of any solution that will clean them of wax and propolis?—L. Clark Rouse, New York.

Answer.—Queen excluders can be cleaned and disinfected at the same time by subjecting them to live steam for about 30 minutes. This can be done by standing them on end in a tank of some sort with about an inch of water in the bottom. The excluders should be supported just above the water. By boiling the water, the tank is filled with steam. The top should be covered with several thicknesses of heavy blanket or a loose-fitting lid to prevent a too rapid escape of the steam. Propolis and wax can be quickly removed from excluders by boiling them for a few minutes in a lye solution made by dissolving a can of ordinary concentrated lye in a wash-boilerful of water.

Size of Cluster for Successful Wintering

Question.—Approximately how many pounds of bees should a colony have the first of November for successful wintering? How large a cluster would that make when the temperature is 20° above zero?—Ben M. Knutson, Colorado.

Answer.—So much depends upon the vitality and age of the bees which form the winter colony, the character of the winter, and the character of the winter stores, that it would be impossible to set a limit as the minimum size of a colony that can be wintered successfully. Small colonies of young, vigorous bees may winter well, while large colonies composed chiefly of old, worn-out bees may fail to survive. A small colony may winter successfully if it has honey of good quality, but might die miserably with dysentery in the middle of the winter if it has honey of poor quality. Small colonies can be successfully wintered during a mild winter, but such colonies would be liable to perish if the winter is long and severe. Other things being equal, strong colonies composed largely of young bees have a much better chance of successful wintering than medium-size or small colonies. Such colonies should have four to six pounds of bees in November and would occupy eight or nine of the spaces between combs when the outside temperature is 20° above zero if the hive is packed. In single-walled hives, the cluster would be smaller.

Cause of Dark-colored Honey

Question.—I took off my honey in September and it was dark in color. An old beekeeper tells me that this was caused by using brood combs which were not right. I have always used new combs. Was this the cause of the dark honey, or was there some other reason?—W. Wrzos, Connecticut.

Answer.—There is a great variation in the color of honey according to the source. Honey from clover and several other sources is light in color, that from dandelion is a brilliant yellow, and that from buckwheat is quite dark. Honey from fall flowers is usually amber or dark in color. In your locality, you no doubt have several varieties of fall flowers which usually produce amber-colored honey or dark-

colored honey. Old combs that have had brood reared in them for many years become quite dark in color. When comb honey is produced above such brood combs, especially if the hives and frames are badly propolized, the cappings are liable to become discolored if the honey is left on the hive too long. Also there is sometimes a slightly different color between honey extracted from old dark-colored brood combs and that extracted from combs that have never had brood reared in them. However, the difference is so slight that it is difficult to detect. If you refer to the honey itself, not the cappings, the dark color of your honey is no doubt explained by the source of the nectar and not because of old brood combs.

Preventing Buckling and Warping in Foundation

Question.—I have a great deal of trouble with foundation warping and buckling when being drawn out, both in brood foundation and thin super foundation. This makes a mess of the job of cutting combs for the new system of cut-comb honey which I am trying out. I always have brood foundation drawn out just above the brood-chamber at the beginning of the heaviest honey flow. These combs come out with a bulge to one side just at the lowest wire and in the middle of the comb lengthwise. I make a tight job of my wiring, but can not see that that would be a factor in the bulging. I shall appreciate any light you may be able to supply on this.—W. A. McDonell, North Dakota.

Answer.—It is quite difficult to prevent waving and buckling of foundation when used without wires for cut comb honey. This is caused by the expansion of the sheet of foundation as the bees draw it out. The trouble is especially noticeable when lightweight foundation is used. The sheets of foundation should be of such size that there is a little space at the ends for expansion lengthwise and more space at the bottom to allow for both expansion while being drawn out and stretching as the combs become heavy with honey. For brood combs the problem is greatly simplified by the use of reinforced foundation. Buckling at the lower wire is liable to occur if the wire is too tight, or if the foundation is too wide so that it touches the bottom-bar before expansion is complete. The wires should give enough to allow for expansion and the sheet of foundation should be of such width that the space between its lower edge and the bottom-bar will be equal to the expansion which takes place as the foundation is drawn out and combs built. It will then just touch the bottom-bar after expansion so it should be well attached to it.

Number of Colonies Per Acre of Sweet Clover

Question.—Is there any information that may be regarded as reliable as to what amount of honey can be gathered from an acre of sweet clover that is allowed to stand for seed in a normal average season? In other words, how many colonies of bees should I plan to put on 40 acres of sweet clover, and what size crop may reasonably be expected in a normal average year?—E. C. Snyder, Ohio.

Answer.—So much depends upon the soil and the climatic conditions that it would be impossible to establish definite figures that would apply in various localities. We have had a number of reports indicating that 20 acres of sweet clover in a locality having no other nectar-bearing plants at the time it was in bloom, was sufficient to produce an average of about 100 pounds per colony in an apiary of 50 to 60 colonies. This would figure out about 300 pounds per acre, which is probably a high figure. On the other hand, in many cases the yield from sweet clover has been disappointing due to adverse soil or weather conditions. It would seem safe to establish an apiary of at least 60 to 80 colonies to gather the nectar from the 40 acres of sweet clover, since usually there are other sources of nectar in the neighborhood.

Black Locust as a Honey Plant

Question.—I am considering planting several hundred trees for post timbers and I want something that will make bee pasture also. Black locust makes fine posts. Does it yield nectar? How about honey locust?—Theodore Jackson, Louisiana.

Answer.—Black locust is an excellent honey plant. In some localities where it is abundant, it supplies the chief source of nectar for the locality. It produces white honey of heavy body and mild flavor. However, it is not a reliable yielder every year, not blooming at all some seasons and in other seasons the bloom secretes nectar sparingly. While honey locust is a source of considerable nectar, it is by no means equal to black locust in nectar secretion.

Hiving Package Bees on Frames of Foundation

Question.—I want to start several colonies from package bees, but do not have any combs. Can I install the packages on foundation, then feed sugar syrup to build them up?—Walter Craske, Illinois.

Answer.—Yes, you can install the packages on frames of foundation and build them up to profitable strength in time for the honey flow provided you install them early enough. The bees will require more feeding when hived on frames of foundation than when given combs already built, and they will not build up quite as fast. An ideal way of installing package bees is to give them at least a few combs containing honey and pollen, although if the spring is favorable so that pollen and nectar are both available from the fields, package bees build up with astonishing rapidity.

Talks to Beginners

Geo. S. Demuth

There is something about becoming acquainted with what goes on inside a beehive that grips the attention and stirs the imagination to a surprising degree. As the student follows the activity of a colony of bees through a season or a series of seasons, the study becomes more and more fascinating. Even veteran beekeepers are thrilled anew again and again each season as they make new discoveries and draw new conclusions from their more intimate contact with the every-day life of their colonies.

This wholesome enthusiasm for more and more information about these wonderful insects is the primary motive for taking up beekeeping in most cases. In fact, the joy of producing a crop of honey usually overshadows, for the time being, the matter of financial profits, important as they are, even in the case of larger commercial honey producers. Thus, it becomes easy to let one's enthusiasm run away with his judgment in taking up beekeeping. However, as a rule, the greater the enthusiasm of the beekeeper, the greater is his success in honey production.

In order to supply information for the eager, questioning throng of beginners in beekeeping, this journal has for years published these Talks to Beginners in each issue from January to October inclusive. In response to the insistent demand, plans have been made for these beginners' lessons again as usual this year.

Prepare for Active Season by Reading

Since, in most of the country, it will be several months before the bees will require much attention, beginners will do well to do a lot of reading about them during the long winter evenings, thus laying a foundation for spring and summer studies and management. In this way, they will soon learn the meaning of the terms used by beekeepers and in beekeeping literature.

Although there are many excellent books on beekeeping, it is not necessary to spend much money for beekeeping literature in order to acquire ability to manage colonies of bees. Quite a number of government bulletins on various phases of beekeeping can be had at very little cost and by writing to the Bee Culture Division of the Bureau of Entomology, Washington, D. C., a list of such bulletins may be obtained. Many of the state agricultural colleges also have published bulletins written with special reference to beekeeping problems peculiar to the state. In many instances, these can be obtained free by writng to the State Agricultural College asking for them. Even the catalogs of beekeepers' supplies sent out by supply manufacturers and dealers are fruitful sources of information since they illustrate and describe the hives and other equipment used in beekeeping. At least one good textbook on beekeeping should be in the possession of every beginner.

While much can be learned from the literature during winter, the best and most profitable lessons are those that come from an intelligent study of the bees themselves. As one reads on the subject in midwinter one becomes quite impatient for the arrival of spring in order to do some of the many interesting things the books, journals and bulletins mention.

Beginners often find it quite profitable to visit well-informed beekeepers or attend meetings of county or state beekeepers' associations. Although some of the discussions at beekeepers' conventions will be over the heads of beginners, usually much valuable information can be picked up in this way.

Purchasing First Colonies

Colonies of bees are often offered at public sales and are sometimes sold at ridiculously low prices. Sometimes excellent colonies can be obtained in this way, but too often colonies offered at public sales have been neglected, therefore are in poor condition. They may be dear at any price. Beginners who contemplate purchasing colonies of bees will do well to obtain them from some one whom he knows to be a successful beekeeper, or ask a neighboring beekeeper to examine the colonies before purchasing. As a rule, it is well to wait until February or March in the South, and April or May in the North, before purchasing any bees. At that time the weather is usually more suitable for examining them, and they have already gone through the more difficult part of the winter and spring for their respective localities. One of the most satisfactory ways of obtaining a start in beekeeping in the North is to purchase package bees from southern shippers, usually in April.

PROPOSED MARKETING AGREEMENT FOR PACKAGE BEES AND QUEENS PRODUCED IN THE UNITED STATES

ARTICLE I.

Purposes:

The parties to this agreement are the contracting shippers, and the Secretary of Agriculture of the United States.

Whereas, it is the declared policy of Congress as set forth in section 2 of the Agricultural Adjustment Act, approved May 12, 1933, as amended—

(a) To establish and maintain such balance between the production and consumption of agricultural commodities and such marketing conditions therefore, as will re-establish prices to farmers at a level that will give agricultural commodities a purchasing power with respect to articles that farmers buy, equivalent to the purchasing power of agricultural commodities in the base period, the base period in the case of all agricultural commodities except tobacco being the pre-war period, August, 1909-July, 1914, and in the case of tobacco, the base period being the post-war period, August, 1919-July, 1929;

(b) To approach such equality of purchasing power by gradual correction of the present inequalities therein at as rapid a rate as is deemed feasible in view of the current consumptive demand in domestic and foreign markets; and

(c) To protect the consumers' interest by readjusting farm production at such level as will not increase the percentage of the consumers' retail expenditures for agricultural commodities, or products derived therefrom, which is returned to the farmer, above the percentage which was returned to the farmer in the prewar period, August, 1909-July, 1914;—

And—

Whereas, pursuant to the Agricultural Adjustment Act, the parties hereto, for the purpose of correcting conditions now obtaining in the production of package bees, nuclei and/or Queens in the United States and the distribution thereof, and to effectuate the declared policy of the act, desire to enter into a marketing agreement under the provisions of Section 8 (2) of the act;

Now therefore, the parties hereto agree as follows:

ARTICLE II.

Definitions.

SECTION 1. As used in this agreement,—

(a) "Secretary" means the Secretary of Agriculture of the United States.

(b) "Act" means the Agricultural Adjustment Act, approved May 12, 1933, as amended.

(c) "Shippers" means and includes such persons, firms, corporations, or associations engaged wholly or in part in the business of producing and/or selling package bees and/or nuclei and/or queens in interstate and/or foreign commerce.

"Contracting Shippers" means those shippers who are parties signatory to this agreement.

(d) "Books and records" means any books, records, accounts, contracts, documents, memoranda, papers, correspondence or other written data pertaining to the business of the shipper in question.

(e) "Committee" means the Control Committee provided for in Article III.

(f) "Managing Director" means the Managing Director appointed by the Committee as provided for in Article III.

(g) "Package Bees" means bees in a shipping container with or without a queen.

(h) "Nucleus" means a comb package containing one (1) comb, two (2) pounds of bees and a fertile queen.

(i) "Queen" means an untested, fertile queen in a mailing cage with attendant workers.

(j) "Comb" means a fully drawn comb in a standard Langstroth frame measuring 17⅝x9⅛ inches containing honey and bee brood.

ARTICLE III.

Control Committee and Powers.

SECTION 1. A control committee shall be established which shall have the powers, duties, and functions hereinafter set forth and any further powers necessarily incidental thereto. The committee shall make such rules and regulations as it may deem necessary for the proper administration of this agreement, and to interpret for the industry any and all provisions of this agreement in its practical operation. The committee shall have the further power to employ and fix the salary of a Managing Director and of such other persons as may be necessary to effectuate the purpose of this agreement.

(a) The committee shall consist of five (5) members to be selected as follows: one (1) member shall be selected by the signatory shippers of Alabama, one (1) member shall be selected by the signatory shippers of California, one (1) member shall be selected by the signatory shippers of Louisiana, and one (1) member shall be selected by the signatory shippers of Texas. The fifth (5th) member shall be selected by the signatory shippers of all other States exclusive of those of Alabama, California, Louisiana, and Texas. Any vacancy in the membership of the committee shall be filled in the same manner as originally selected.

(b) All members of this committee including the Managing Director are subject to the approval of the Secretary and any or all of them may be removed at his discretion.

(c) Each member of the committee shall file with the Secretary, on or immediately after the effective date of this agreement, his acceptance of his appointment and his Post Office and telegraphic address.

(d) The members of the committee shall hold office for one year and until their respective successors are selected. All subsequent selections of the committee shall be made on a date fixed by the committee.

(e) Members of the committee shall serve without compensation but shall be allowed legitimate expenses incurred in connection with their official duties as defined by this agreement.

(f) Any action taken by the committee shall be by a majority vote of the membership of the committee. In the event that any member of the committee shall be unable, temporarily or otherwise, to perform his duties as a member of such committee, he is hereby authorized to designate some other person from among the contracting shippers to attend business, vote and perform such temporary duties in his place and stead.

(g) In the event complaint should be made against any member of the committee charging a violation of any provision of this agreement, such member shall not have the right to vote on the action to be taken on such complaint, and the Managing Director shall have the right in such cases to vote in place of such member.

(h) Any interpretation of this agreement by the committee and any regulation for the administration thereof prescribed in it or of any other action taken by it pursuant to the provisions herein, shall be subject to revocation by the Secretary. All such regulations, interpretations, and orders shall be filed with the Secretary before becoming effective.

(i) The committee may appoint a Managing Director for the committee, who shall not be a shipper, or be affiliated with or employed by any shipper.

(j) Each contracting shipper agrees to and hereby is bound by all acts and decisions of the committee done or made in conformity with the provisions of this agreement, provided, however, that he shall have a right of appeal to the Secretary as provided herein, whose decision shall be final.

ARTICLE IV.

Prices.

SECTION 1. The contracting shippers agree

that the committee shall establish, subject to the approval of the Secretary, a schedule of prices which shall be the minimum prices at which they will sell or offer for sale package bees, nuclei and/or queens following the effective date thereof, and that said schedule of prices shall remain in effect until altered or amended by said committee with the approval of the Secretary. Any schedule of proposed prices or proposed changes or amendments thereof shall be accompanied by data showing such proposed prices or changes to be fair and reasonable.

ARTICLE V.

Trade Practices.

SECTION 1. No contracting shipper shall make or cause to be made or published any false, untrue, misleading, or deceptive statement, by way of advertising, or otherwise, relating to the business of himself or of any other shipper.

ARTICLE VI.

Terms of Sale.

SECTION 1. The contracting shippers agree to replace, without charge all queens which arrive dead or in a deformed or abnormal condition. Duplicate queens are to be placed in the United States mail within twenty-four (24) hours after notification by the buyer. The dead or abnormal queens are to be placed in the United States mail for return within twenty-four (24) hours after receipt. As an alternative to receiving duplicate queens, the buyer may demand full refund.

SECTION 2. The contracting shippers agree to replace with package or nuclei of the same weight, with queens, all packages or nuclei with queens in shipments of less than five (5) packages or nuclei that are received with seventy-five (75) per cent or more of the bees dead, transportation to be paid by the contracting shippers. Queens in good condition in damaged packages or nuclei may be retained at buyer's option and paid for by the buyer at the contracting shipper's current prices. Live queens which can not be used by the buyer are to be returned to the shipper within twenty-four (24) hours in original queen-cages.

SECTION 3. The contracting shippers agree, in shipments of less than five (5) packages or nuclei, to replace with packages or nuclei of the same weight but without queens, packages or nuclei which are received with twenty-five (25) to seventy-five (75) per cent of the bees dead but with queens still alive, transportation to be paid by the contracting shipper. In shipments of five (5) or more packages or nuclei arriving in bad condition, the buyer shall salvage the living bees to the best of his ability, making as many full weight packages or nuclei as possible, and the contracting shipper shall make adjustment pound for pound for the difference. Any living queens that are not used shall be returned to the shipper within twenty-four (24) hours, unless the buyer can use any of the extra queens at the regular price.

SEC. 4. The contracting shipper must guarantee safe arrival of shipments at destination.

SEC. 5. When the contracting shipper has accepted an order for package bees, nuclei, or queens and received the money therefor with the date of delivery specified, and the buyer does not receive said packages, nuclei, or queens within ten (10) days from the date specified for arrival at destination, the buyer shall have the right to cancel said order by wire and the shipper shall return to the buyer full payment for said packages, nuclei, or queens.

SEC. 6. As a protection against loss of queens in transit, the contracting shipper may include one extra queen in orders of twenty-five (25) packages, nuclei, or queens, and one (1) additional queen for each additional twenty-five (25) packages, nuclei, or queens, or fraction thereof, but in no case, shall he give without charge, more extra queens than in this ratio.

SEC. 7. Contracting shippers shall not allow any discounts, commissions, or rebates, extra packages, nuclei or queens, or grant any special concessions whatsoever that would reduce the prices below those listed with the Secretary, except as provided for herein.

SEC. 8. Prices shall be quoted in American currency in the United States, and/or in terms of foreign currency, the equivalent of United States currency in foreign countries.

SEC. 9. All queens, other than those in packages or nuclei, are to be sent postpaid by ordinary mail unless the buyer specifies express or air mail, in which case the buyer is to pay the transportation on the shipments in excess of what the ordinary parcel post charges would have been.

SEC. 10. No shipments of bees or queens are to be made in violation of any state statutes relating to the diseases of bees.

ARTICLE VII.

Reports.

SECTION 1. The contracting shippers shall severally, from time to time, upon the request of the Secretary, furnish him such information, on and in accordance with forms of reports to be supplied by him, as may be necessary for the purposes of (1) assisting the Secretary in the furtherance of his powers and duties with respect to this agreement, and/or (2) enabling the Secretary to ascertain and determine the extent to which the declared policy of the act and the purposes of this agreement will be effectuated, such reports to be verified under oath.

SEC. 2. The contracting shippers also severally agree that, for the same purposes, and/or to enable the Secretary to verify the information furnished him on said forms of report, all their books and records shall, during the usual hours of business, be subject to the examination of the Secretary.

SEC. 3. The contracting shippers shall severally keep books and records which will clearly reflect all financial transactions of their respective businesses and the financial conditions thereof.

SEC. 4. All information furnished the Secretary pursuant to this article shall remain confidential in accordance with the applicable General Regulations, Agricultural Adjustment Administration.

SEC. 5. Each contracting shipper shall report to the Managing Director his or its total receipts, total shipments, and amount of unfilled orders, and such other information necessary to the enforcement of this agreement requested by the Managing Director on printed forms provided for this purpose and to be mailed as of the 1st and 15th of each month, during April, May, June, and July, and thereafter on or before the 5th of each consecutive month through and including March of each year.

(a) The Managing Director shall not disclose to the Committee or to any person other than the Secretary, the information required in the preceding paragraph relating to any contracting shipper, but he shall compile a consolidated report of the same, which information shall be simultaneously mailed to all parties of this agreement.

ARTICLE VIII.

Administration.

SECTION 1. If it shall come to the knowledge of any contracting shipper that any other contracting shipper is violating any of the terms of conditions of this agreement, the party having such knowledge shall notify the Managing Director of such violation by a written statement containing the charges and all available substantiating evidence, and/or in the event such information shall come to the knowledge of the Managing Director from any other reliable source, he shall notify the committee and it shall be the duty of the committee and/or the Managing Director to investigate the charges. After due investigation, if it is the opinion of the Managing Director and the committee that the charges are true, it shall notify the member so violating the rules of its findings and request that such violation be discontinued. If the party continues in the violation, the Managing Director and the committee shall notify the Secretary, who may take such action as he deems

necessary, PROVIDED that nothing contained in this paragraph shall be construed in derogation of the rights of the Secretary under the act nor in derogation of the rights of any person to be heard when such right of hearing is granted under the act or otherwise by law.

SEC. 2. The committee shall have the authority to permit a contracting shipper to sell below the minimum prices, in the event of extenuating circumstances other than those incident to normal business hazards.

SEC. 3. In the event a contracting shipper makes an adjustment, other than those enumerated in Article VI, with a buyer which modifies the price given on an original invoice, the shipper shall immediately report such adjustment and place all facts before the Managing Director. If such adjustments occur so often that the Managing Director doubts that such contracting shipper is acting in good faith, then and in that event the Managing Director shall notify said contracting shipper that no such settlement or price adjustment can be made again by that shipper without first submitting same to the committee.

ARTICLE IX.

SECTION 1. **Expenses.** The Committee is authorized to incur such expenses and make such expenditures as may be necessary in the performance of its functions and each processor shall be subject to his pro rata share of the cost of establishing and maintaining this Code.

The share of each shipper shall, tentatively, be such proportion of the total expenses of the Committee as such shipper's gross sales in the preceding calendar year bears to the total gross sales of all shippers in such year. The share shall be recomputed at the end of the current year on the basis of each shipper's proportion of the total gross sales for said year and adjustments shall be made with each shipper on the basis of such recomputation.

ARTICLE X.

Licenses.

SECTION 1. Each shipper hereby applies for and consents to a license to be issued by the Secretary applicable to all shippers of package bees and queens, in the United States, in order better to effectuate the purposes of this agreement and act.

ARTICLE XI.

Effective time.

SECTION 1. This agreement shall become effective at such time as the Secretary may declare above his signature attached hereto, and this agreement shall continue in force until terminated as follows:

(a) The Secretary may at any time terminate this agreement as to all parties thereto by giving at least one day's notice by means of a press release or in any other manner which the Secretary may determine.

(b) The Secretary may at any time terminate this agreement as to any party signatory thereto, by giving at least one day's notice, by depositing the same in the mail and addressed to such party at his last known address.

(c) The Secretary shall terminate this agreement upon the request of the contracting shippers representing sixty-five (65) per cent of the total dollar volume of package bees, nuclei, and queens sold during the preceding year, respectively, by giving notice in the same manner as provided in paragraph (a) above.

(d) This agreement shall in any event terminate whenever the provisions of the act authorizing it cease to be in effect.

ARTICLE XII.

Duration of immunities.

SECTION 1. The benefits, privileges, and immunities conferred by virtue of this agreement shall cease upon its termination, except with respect to acts done prior thereto; and the benefits, privileges and immunities conferred by this agreement upon any party signatory hereto shall cease upon its termination as to such party except with respect to acts done prior thereto.

ARTICLE XIII.

Counterparts.

SECTION 1. This agreement may be executed in multiple counterparts, which when signed by the Secretary shall constitute, when taken together, one and the same instrument as if all such signatures were contained in one original.

ARTICLE XIV.

Additional parties.

SECTION 1. After this agreement first takes effect any shipper may become a party to this agreement, if a counter part thereof is executed by him and by the Secretary. This agreement shall take effect as to such new contracting party at such time as the Secretary may declare above his signature attached to such counterpart, and the benefits, privileges, and immunities conferred by this agreement shall then be effective as to such new contracting party.

ARTICLE XV.

Agents.

SECTION 1. The Secretary may by a designation in writing, name any person, including any officer or employee of the Government, to act as his agent in connection with any of the provisions of this agreement including the right of such agent or agents to attend any meetings of the Control Committee. Said representative shall have no voting power.

ARTICLE XVI.

Amendments.

SECTION 1. This agreement may be amended in any respect by agreement between the Secretary and the committee.

ARTICLE XVII.

Signatures of parties.

In witness whereof the contracting parties, acting under the provisions of the Agricultural Adjustment Act, for the purposes and subject to the limitations herein contained, and not otherwise, have hereunto set their respective hands and seals.

. . . . . .
. . . . . .
. . . . . .

EXHIBIT A.

The MINIMUM RETAIL PRICES for package bees, nuclei, and queens shall be as follows:

(a) Prices of Queens Postpaid—November 1 to May 31.

One to nine (1 to 9) queens.....$0.85 each
Ten to twenty-four (10 to 24) queens .80 each
Twenty-five to forty-nine (25 to 49) queens .75 each
Fifty (50) queens or more..... .70 each

(b) Prices of Queens Postpaid—June 1 to October 31.

One to nine (1 to 9) queens..... .70 each
Ten to twenty-four (10 to 24) queens .65 each
Twenty-five to forty-nine (25 to 49) queens .55 each
Fifty (50) queens or more..... .50 each

(c) The price of purely mated queens shall be double the price of untested queens.

(d) Prices of Package Bees with Queens—Express Collect, November 1 to May 31

Two (2) pounds of bees net.

One to nine (1 to 9) packages.....$2.65 each
Ten to forty-nine (10 to 49) packages 2.55 each
Fifty (50) or more packages..... 2.45 each

Three (3) pounds of bees net.

One to nine (1 to 9) packages..... 3.40 each
Ten to forty-nine (10 to 49) packages 3.30 each
Fifty (50) or more packages..... 3.20 each

(e) Prices of Package Bees with queens sent by Parcel Post shall be twenty (20) cents higher per package than packages sent by express, plus the postage.

(f) Prices of Nuclei—Express Collect—November 1 to May 31.

Nuclei with One (1) Comb with Two (2) pounds bees net and queen.

One to nine (1 to 9) nuclei.....$3.15 each
Ten to forty-nine (10 to 49) nuclei.. 3.05 each
Fifty (50) or more nuclei..... 2.95 each

(g) For each additional comb, add fifty (50) cents.

(h) For each additional pound of bees, add eighty (80) cents.

(i) Prices of Package Bees and Nuclei from June 1 to October 31.

The price of two (2) pound packages and two

(Continued on page 64.)

Sell and Buy Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate—7 cents per counted word each insertion. Copy should be in the 15th of month preceding.

HONEY FOR SALE

We do not guarantee the reliability of honey sellers, although we require strict references from them.

FINE HONEY packed to suit you. Ray C. Wilcox, Odessa, N. Y.

NEW crop clover honey in new sixties. D. R. Townsend, Northstar, Mich.

CHOICE Michigan clover honey, new 60's. David Running, Filion, Mich.

FOR SALE—Extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

WHITE clover extracted honey, sample 15c in stamps. Kalona Honey Co., Kalona, Iowa.

EXTRACTED clover, light amber and buckwheat at market price. C. J. Baldridge, Kendaia, N. Y.

FOR SALE—Amber and buckwheat comb and extracted. H. G. Quirin, Bellevue, Ohio.

FINEST New York white clover honey in any container. Angus Carruthers, Syracuse, Rt. 2, N. Y.

HONEY—New crop clover, amber and buckwheat, both comb and extracted. F. J. Smith, Castalia, Ohio.

OHIO'S finest extracted white clover honey. Prices on request. Sample, 15c. Geo. Morrison, Cloverdale, Ohio.

FOR SALE—White clover honey in 60-lb. cans. None finer. Satisfaction guaranteed. J. F. Moore, Tiffin, Ohio.

CLOVER honey, choice, ripened on bees. Satisfaction guaranteed. Case or quantity. E. J. Stahlman, Grover Hill, Ohio.

NEW crop white clover extracted honey in new 60-lb. cans. State how much you need. Leonard S. Griggs, 711 Avon St., Flint, Mich.

NEW YORK State honey, light amber clover in new 60's, 7c case lots; ton lots, 6½c; amber comb goldenrod-clover, $2.25 case. H. B. Gable, Romulus, N. Y.

WRITE for prices on our new crop clover extracted and comb honey; also buckwheat and goldenrod extracted and comb honey. H. E. Crowther, Jefferson, Ohio.

NEW crop section comb honey, nice white stock securely packed in carrier crates of four and eight cases. The Colorado Honey Producers' Association, Denver, Colo.

WHITE clover honey, comb, extracted clover, in 60-lb. cans, 7c; 5000 lbs. extracted buckwheat in 60-lb. cans, 6c; 1-lb. sample, 15c. F. W. Summerfield, Grand Rapids, Ohio.

NEW YORK State comb and extracted honey, buckwheat and clover, any quantity, all size packages. Five-pound pails my specialty. Edward T. Cary, Midland Ave. and Tallman St., Syracuse, N. Y.

RASPBERRY HONEY—In 60-lb. cans, for $6.00 a can. In 10-lb. cans by mail, postpaid up to and including fourth zone, for $2.00 a can. Sample by mail, 20c. Elmer Hutchinson & Son, Lake City, Mich.

FOR SALE—Clover and buckwheat extracted in 60-lb. cans. F. W. Lesser, Fayetteville, N. Y.

LIGHT amber and amber honey, in 60, 10, 5-lb. tins. Harry T. Gable, Romulus, N. Y.

HOWDY'S HONEY—Howard Potter, Ithaca, Michigan, or 72 Perkins Hall, Cambridge, Mass.

MICHIGAN clover honey. New cans. E. D. Townsend & Sons, producers, Northstar, Mich.

FOR SALE — Light amber honey in 60-lb. packages. Prices right. Geo. M. Sowarby, Cato, N. Y.

MICHIGAN comb honey, light, $2.50; amber, $2.25 per case. H. R. Shelton, Parma, Mich.

CHOICE clover honey, in new 60-lb. cans. Sample, 10c. C. E. Glover, R. R. 6, Kalamazoo, Mich.

HARRIS—One carload Michigan's best white extracted in new cans. J. N. Harris, St. Louis, Mich.

CHOICE clover honey in 60-pound cans. Reasonably priced. Frank Rasmussen, Greenville, Michigan.

MICHIGAN'S finest extracted clover honey. Prices and sample on request. Chas. C. Chamberlin, Romeo, Mich.

WRITE for prices on our choice water white honey, one can or carload. McIntire & Sons, Fruitdale, South Dakota.

THREE HUNDRED cases white comb honey; also choice Michigan extracted in sixties. M. H. Hunt & Son, Lansing, Mich.

FINE quality orange, palmetto and mangrove honey in new sixties. Sample, 6c. Peter W. Sowinski, Fort Pierce, Florida.

FOR SALE—Extracted clover and fall flowers; honey in new cans and cases. Sample free. W. S. Earls & Son, New Canton, Ill.

CHOICE amber honey, gathered mostly from sweet clover and alfalfa, at $6.00 per case of 120 lbs; sample, 10c. W. J. Manley, Sandusky, Michigan.

FOR SALE—Bulk comb honey in any style container, Spanish needle or clover; also extracted honey, same variety, any amount. Hyde Bros., New Canton, Ill.

FOR SALE—Comb honey, No. 1 buckwheat, $2.00 per case. White clover and light amber extracted in 60-lb. cans, 5-lb. pails, or any size bottles. Prices on request. Carlton D. Howard, Ovid, N. Y.

FOR SALE—Well ripened white sweet clover honey. Don't let your customers be without honey. The stock we furnish will please them. Write today for prices. Colorado Honey Producers' Association, Denver, Colo.

$1.00 DELIVERS you parcel post up to 4th zone, 2½-lb. tin of pure delicious maple cream or sugar or ½ gal. pure first run maple syrup, or send $2.00 and get double amounts. Get our illustrated circulars and make some real money selling our great line of health sweets to your friends and the public now. Start the new year right with the old reliable Griswold Honey Co., Madison, O.

LIGHT amber clover honey, $7.20 case. Edw. Klein, Gurnee, Ill.

FOR SALE—Buckwheat comb and extracted. C. Holm, Genoa, Ill.

MICHIGAN clover extracted honey in sixties. Leland Farnsworth, Davison, Mich.

FOR SALE—14 cases of sweet clover honey, $7.20 a case. H. Stuit, Hospers, Iowa.

FOR SALE—White clover honey in 60-lb. cans, 6½c per lb. Jos. Hoehn, Ottoville, Ohio.

WRITE me for prices and samples of honey. I can please you. Thos. D. Sherfick, Shoals, Ind.

WHITE clover extracted, 7c; light amber clover, 6½c; amber clover, 6c. C. B. Howard, Geneva, N. Y.

BUCKWHEAT and amber comb honey, fancy, $2.25; No. 1, $2.00; No. 2, $1.50. Noel J. Loucks, Springboro, Pa.

HONEY—We sell the best. Combs in carriers of eight cases each; extracted, basswood, buckwheat, sweet clover, white clover and light amber. A. I. Root Co. of Chicago, 224 West Huron St., Chicago, Ill.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTE—We will not guarantee any honey buyer's financial responsibility and advise all beekeepers to sell for cash only or on C. O. D. terms except when the buyer has thoroughly established his credit with the sellers.

WANTED—Honey. White clover, light amber in 60-lb. cans. Roscoe F. Wixson, Dundee, New York.

WANTED—Comb and extracted honey. Mail sample, state quantity and price. Sherfick Farms, Shoals, Ind.

WANTED—Carlots of honey, state quantity, shipping point and price. Mail sample. Bryant & Cookinham, Inc., Los Angeles, Calif.

WANTED—Carload or less of extracted white clover honey. Mail price, quantity and sample to Clover Blossom Honey Co., 712 Kossuth St., Columbus, Ohio.

WANTED—Clover or amber honey. Any quantity up to carload. Send samples, quote price delivered Chicago. Ernest R. Heath, 3216 Eschol Ave., Zion, Illinois.

WANTED—Honey and beeswax. Beekeepers will find it to their advantage to communicate with us. Please send samples, state quantity available and prices. California Honey Company, Hamilton & Company, Agent, 108 W. Sixth St., Los Angeles, California.

FOR SALE

FOR SALE—Hershiser wax extractor. Geo. Dodds, Cambridge, N. Y.

GENERAL JOB printing done by A. Matson, 21513 Donaldson, Dearborn, Mich.

FOR SALE—Old-fashioned round straw beehives. G. Korn, Berrien Springs, Mich.

SAVE queens. Safin cages now 15c; ten for $1. Allen Latham, Norwichtown, Conn.

TO increase honey crop one-third to two-fifths, write Delbert Lhommedieu, Colo, Iowa.

We can supply hives and hive parts, well made of good white pine, at reasonable prices. Ray C. Wilcox, Odessa, N. Y.

BEEKEEPERS—Improve sources of nectar by planting vitex trees, or seed. Two-year-old trees, 40c; one-year-old trees, 25c. New tested seed at $1.00 per ounce. All prepaid. Joe Stallsmith, Galena, Kansas.

FOR SALE—Comb foundation at money-saving prices. Plain, wired, and thin section. Wax worked at lowest prices. E. S. Robinson, Mayville, N. Y.

ELECTRICAL comb-honey cutting knives, uncapping knives, $10.00 each; with thermostat, $2.50 more. Paul Krebs, 8000 Fulton Ave., Detroit, Mich.

BEST quality bee supplies, attractive prices, prompt shipment. Illustrated catalog upon request. We take beeswax in trade for bee supplies. The Colorado Honey Producers' Assoc., Denver, Colo.

FOR SALE — Fine quality queen-mailing cages; Root quality bee supplies; both comb and extracted honey. Orders filled promptly. Write us or drive over M53, fifty miles north of Detroit. Hamilton Bee Supply Co., Almont, Mich.

BEES AND QUEENS FOR SALE

WHOLE colonies of bees, if advertised for sale in these columns, must either be guaranteed free from disease, or, if not so guaranteed, the exact condition of the bees and the conditions of sale must be clearly stated in the advertisement; or it will be satisfactory if the advertiser will agree to furnish a certificate of health from some authorized bee inspector at time of sale.

ITALIAN QUEENS—Watch for large ad. Willie Groom, Gashland, Mo.

TEN years with Caucasians. Write for prices and description of our select bred mountain gray honey bees. Bolling Bee Co., Bolling, Ala.

QUEENS mailed anywhere, any time. Winter tested Italian queens, 75c each. D. W. Howell, Shellman, Georgia.

BETTER PACKAGE BEES—Better queens for 1934. Vigorous, gentle, disease resistant three-banded Italians. Best honey producers. Write for full information and prices. H. C Short, Fitzpatrick, Ala.

MR. BEEKEEPER, the prospects for 1934 are bright. We will be prepared to supply you with Caucasian queens and bees of quality. Write us your needs and we will quote prices. Lewis & Tillery Bee Co., Greenville, Ala.

HELP WANTED

HELP WANTED—On my 60-acre farm and 100 colonies; state wages expected. Theo. Keinath, Vassar, Mich.

WANTED—Reliable young man of good health and habits for coming bee season. Board and room provided. Give full particulars and wages expected. Merritt L. Winn, King Ferry, N. Y.

MISCELLANEOUS

WANTED—100 strong colonies of bees. C. Jankowski, Gurnee, Ill.

WANTED—Foundation machine for Hoffman frames. W. S. Haynes, Dunedin, Fla.

WILL buy or work on shares, commercial apiary; prefer New York State. Box 216, Montpelier, Vt.

REBUILT ELGIN WATCHES—$4.50 and up in new chromium cases. Circular. Snyder's Time Shop, Bloomville, Ohio.

LAND WANTED—One to three acres, with or without colonies, within sixty miles of New York City. Henry Kroger, 641 Yzanga Place, Bronx, New York.

DAHLIAS—Beautify home, increase sales honey stand. Giant Bloom, 6 to 12 inches in diameter. Trial collection, three tubers, $1.00 postpaid. Send stamp for price list. Kenneth Francisco, Junction City, Ohio.

Carniolans--Caucasians

Queens and packages of both races in season. If you are not familiar with the good qualities of these races ask for my free circular.

Albert G. Hann, Glen Gardner, N. J.

QUALITY QUEENS AND BEES FOR 1934

Let us quote you prices on the quantity of bees or queens you will need next spring.

MERRILL BEE COMPANY
BUCKATUNNA, MISS.
Mississippi's Oldest Shippers

1934

Let us quote you on your beekeeping needs for this season. We are still doing business at the old stand and better able to give you satisfaction than ever.

White Pine Bee Farms, Rockton, Pa.
With Gleanings since 1911.

We are Cash Buyers of Honey and Beeswax
Submit samples and best prices, freight prepaid Cincinnati
We also furnish cans and cases.
The Fred. W. Muth Co. PEARL & WALNUT CINCINNATI, O.

Package Bees for 1934

WRITE FOR PRICES, DESCRIPTION OF STOCK, ETC.

The Crowville Apiaries
Winnsboro, Rt. 1, La.

TOLD BY THE JAY

(Continued from page 35.)

quarters of an hour." I asked, "Ain't all these houses Chicago?" He answered, "Oh, yes, but the station is about thirty-five miles away yet."

Say, I never knew any city could be as large as that. In South Dakota our towns were large if they had 800 inhabitants. I could ride through any of them on my pony in a minute or two, and here we were going forty miles an hour right through the city and wouldn't come to our station for three-quarters of an hour!

I certainly did get initiated to the city that day. It was in the days when the saloon was such a blessing to humanity and I saw a fight and attempted murder in a street car over a transfer on which the drunk proposed to ride both ways. When I got into the fair grounds, my cracky, what bustin' big buildings! The Transportation Building it seemed to me would just about cover our 160-acre farm. I took my first ride in an elevator and, take it from me, those elevators traveled, that's what they did. As fast as we went, I thought we surely would punch the top of the building out before we could stop. But just before we got to the top the elevator man put on the brakes and we stopped so suddenly that my breakfast wanted to keep right on going and only my strong will power kept me from making a scene.

One thing I saw in the Agriculture Building made a lasting impression on my mind, and that was some of the most beautiful comb honey imaginable. It was the first section honey I had ever seen, and I decided right then that some day I would raise some. Well, in the 40 years that have rolled around since then I have produced a little and hope to produce more in the next 40 years.

Garon's Bright Italian Bees & Queens

We are ready to book orders, large or small, for our "Diamond" Bees and Queens at minimum Shippers' Code Prices, subject to approval of the Code by U. S. Department of Agriculture. We urge early bookings.

Garon Bee Company, Donaldsonville, La.

PACKAGE BEES

Never before in our 20 years of shipping package bees and queens have we been in as good position to ship our customers Quality Bees and Queens. With us it is not just a matter of getting your money. We want to furnish you with packages and queens that will produce a profitable crop of honey. Each of our 20 years of experience has taught us how to improve our quality and service.

More Honey Needed

Honey is the Best Sweet in existence. The human family needs the best food obtainable. In America we eat over 100 pounds of sugar and only 2 pounds of honey per year. We can all double our production and then only supply a very small per cent of our sweet requirements, not much over a teaspoonful per day per person. For the person who knows how, it is easy to get people to substitute honey for sugar. Did you know you could make a delicious pie filler containing 60% honey and the pies won't be sweet to the taste? You can, and you will like them. The American Honey Institute, Madison, Wisconsin, will tell you how. To show you what can be done, the consumption of honey per person at Mount St. Benedict in Crookston, Minnesota, in 1919, was 2 pounds and in 1931 was 85½ pounds. Let's produce more honey, give a little to The American Honey Institute to promote the use of honey and get our share of the money spent for sweets.

Higher Quality

Not only more packages but packages of higher quality is our goal in 1934. We will leave nothing undone in supplying our customers with packages and queens that will give them record yields. With our 20 years of experience we will not fail you.

Service

Each year we realize more and more the importance to you of shipping your bees on time. You must have them at the proper time if you are to realize the most out of them. We doubt if there is anything more important to the Honey Producer than Prompt Deliveries. We will leave it with our customers as to what our past service has been and we are promising you now that we are going to make it better in 1934 than ever before.

A New Cage

We will use an entirely different queen cage in our packages for 1934, one that we are sure will put the queens to you 100% alive, in excellent condition, ready to go to laying immediately the bees are released. and one that will give 100% safe introduction.

Let Us Quote

you on your requirements. We want to make 1934 the most progressive year beekeepers have ever known.

The Stover Apiaries, Tibbee Station, Miss.

PROPOSED HONEY MARKET AGREEMENT FOR PACKAGE BEES AND QUEENS

(Continued from page 59.)

(2) pound nuclei during this period shall be fifty (50) cents less per unit, and sixty (60) cents less per unit for three (3) pound packages and three (3) pound nuclei.

The MINIMUM WHOLESALE PRICES for package bees, nuclei, and queens shall be as follows:

(a) Ten (10) per cent less than the minimum retail prices on 100 to 249 queens, package bees and nuclei.

(b) Fifteen (15) per cent less than the minimum retail price on 250 or more queens, package bees and nuclei.

The WHOLESALE PRICES shall be granted only to:

1. Wholesale supply houses handling bee supplies, bees, and queens.
2. County and State or other recognized beekeepers' associations buying in lots of 500 or more package bees, nuclei, or queens;
3. Mail order houses handling bees, queens, and bee supplies;

Get Ready-Better Days Are Here

Order

HARRELL'S

Three-banded Italian Queens and Bees

They are Accredited and Certified by Alabama Department of Agriculture.

Package Bees Via Express Collect.

2-lb. pkg. with select untested queen—1 to 9, $2.65 each; 10 to 49, $2.55 each; 50 or more, $2.45 each.

3-lb. pkg. with select untested queen—1 to 9, $3.40 each; 10 to 49, $3.30 each; 50 or more, $3.20 each.

Parcel Post prices quoted on request.

Select Untested queens—1 to 9, 85c each; 9 to 24, 80c each; 25 to 49, 75c each; 50 or more, 70c each.

10% discount on orders for 100 to 249 queens or packages.

15% discount on orders for 250 or more queens or packages.

All prices subject to Code changes.

Why wait, book your order early as all shippers' prices will be uniform.

Please note firm's name changed from Hayneville Apiary Co. to W. E. Harrell, but no change in personnel.

W. E. HARRELL

Hayneville Alabama

More About Queens

There is no getting away from the fact that the maximum crop of honey can be secured only when every colony is headed with the best queen obtainable and when each queen is given a chance to do her very best work.

Aggressive beekeepers are satisfied with nothing but the best strain of queens. For over half a century it has been our constant endeavor to produce queens with the most desirable characteristics.

Try Root Queens.

The A. I. Root Company

Medina, Ohio

Wanted Fancy White Comb Honey

Not Wrapped but in Glass-Front Wood Cases

State best price Frt. Paid Cincinnati, O.

THE FRED. W. MUTH CO.

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